



# AMERICAN CINEMATOGRAPHER

ICTURE CAMERA MAGAZINE

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**August, 1938**

Published in Hollywood by  
American Society of Cinematographers



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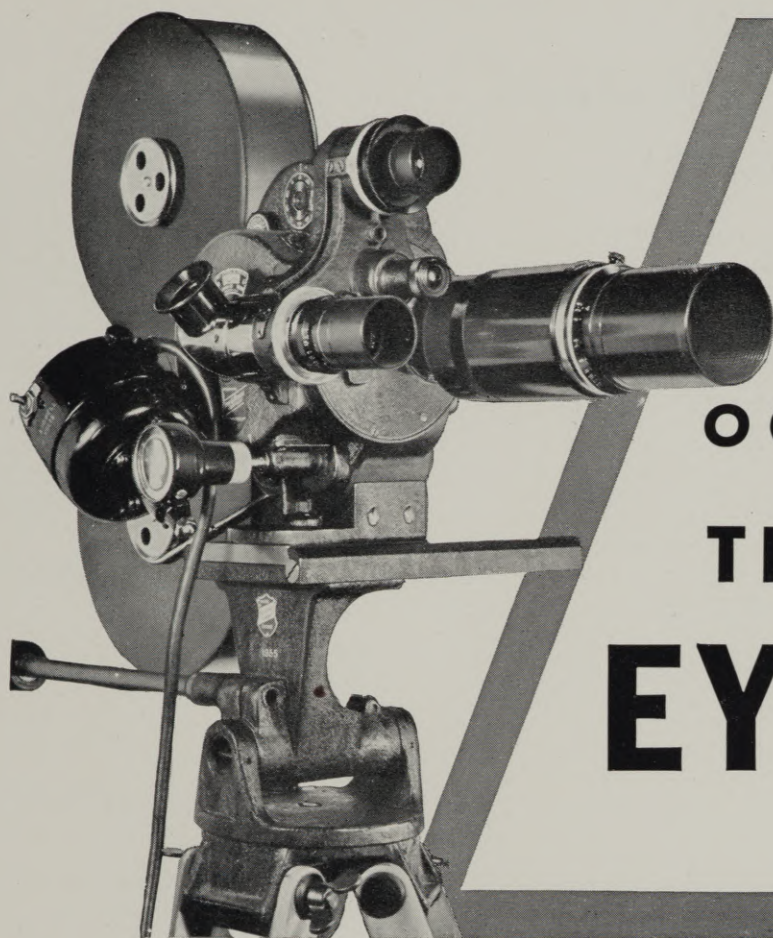
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## The Front Cover

On the front cover will be found pictures of two of the outstanding players of "Algiers," the production declared by the Hollywood correspondents in the Hollywood Reporter poll to be the outstanding film released during the month of June. These players in this splendid Walter Wanger production are Charles Boyer and Sigrid Gurie.

In the nine months this magazine has been printing on its front cover a scene from one of the current month's outstanding pictures each of these players appears two times. Boyer was shown last December with Garbo in a scene from M. G. M.'s "Conquest" and Gurie was with Cooper in March in Goldwyn's "Adventures of Marco Polo."

Two members of the American

Society of Cinematographers are tied in with "Algiers." Besides awarding the picture the honors of being the best production the correspondents also voted it to be the best photographed of the month—credit for that achievement going to James Wong Howe, A.S.C.

Lloyd Knechtel, A.S.C., with headquarters in London, is credited with the background shots of the Casbah section of Algiers—as was recorded in these columns some months ago.

The photographic difficulties confronting Jimmy Howe in his shooting of the production will be manifest to those camerawise persons who may be so fortunate as to look upon "Algiers."

For the still photograph we are indebted to Robert Coburn.



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# Here's Camera Club in Real Home

By GEORGE BLAISDELL

BROWSING around the United States Navy's town of San Diego in general and the park of Balboa in particular before as well as on or about the Fourth of July it was a pleasure to spot the Photographic Arts Building of Balboa Park, home of the Photographic Arts Society of San Diego. Here is a structure ideal in setting for a photographic arts group. Here, too, is a park fortunate to be sponsored by a municipality of such public spirit as to be permitted to sanction for the benefit of the public of a public building for what legally is a private body. The city gains as an institution and so does the society—and of course where public showings are given to private collections so do people, too.

When the big exposition was organized in 1915 the Christian Science Church erected the present structure. Later it became necessary for the church either to raze the building and restore the landscape or surrender the structure. It elected to surrender, with the gratifying result.

For the month of July there was an exhibition of photographs fifty-three in number by Helen Thompson Farrell sponsored by the Photographic Arts Society. It is open to the public Saturday and Sunday from noon to 4:30.

WESLEY SMITH of Smith and Aller, representing DuPont film, left Los Angeles July 13 for a month or more in the East on business bent. But not all of his attention will be given to sordid matters of trade. He

packed an Eastman camera of the cine kodak 16mm. variety and a wad of film that would choke a mule.

But this DuPont man knew 35mm. professionally before 16mm. was on the map, so it goes without saying that what he brings home in the way of results will bear critical examination on the part of those who claim to know their focuses and their angles.

In the East also on business at the same time were Dr. Herbert Meyer and C. King Charney of C. King Charney Inc., representing Agfa Films, with offices in Hollywood and New York.

IN THE last issue of this magazine much attention was paid to *Movie News*, official organ of the Australian Amateur Cine Society, and to the doings of Australian amateurs. Just after the story was printed we received a letter from James A. Sherlock of Sydney, one of the foremost of the Australian amateurs, who alluded to a reference previously made in these columns to the *Movie News*.

The little booklet of twelve pages and four covers is self-supporting. Five hundred copies are printed, which are distributed among trade houses, clubs and members in Australia.

"I am hard at work on a film showing the first 150 years of the history of the Australian Nation," writes the amateur producer—or perhaps we should qualify the description by making it the amateur producer with a professional's judgment. "We have just celebrated our Sesqui-Centennial Anniversary (that

means we are 150 years old), and it is not the celebrations I am filming but the nation builders who had the courage and foresight to keep Australia white.

"I have found that the history of Australia contains a very interesting romance of modern civilization. That is what I am endeavoring to record in my film.

"We Australians respect the culture, art and capacity for hard work of our Asiatic neighbors, but realize the responsibility we have of developing a pure Anglo-Saxon race in this continent."

Our readers heartily will agree with us that this amateur cinematographer possesses in high degree the pioneering vision of the Anglo-Saxon—aye, he has even more. Not only has he the vision. He has the courage and the ability to translate that vision into accomplishment.

The Australian Government well could afford to place behind—it is beyond understanding why it does not so do—James A. Sherlock and his associates all the resources necessary to translate to a major screen, a professional screen, this cavalcade of a continent in the magnitude the subject deserves.

And on the other side of the world the Imperial Government which holds in its keeping the future welfare of a large part of the race that claimed such sons as Rudyard Kipling and Cecil Rhodes well might declare:

"This job belongs to us!"

REPORTS from Buenos Aires give comments on Argentine Sono Film's "El Ultimo Encuentro" ("The Last Encounter"), photographed by John Alton, A.S.C. Cine Argentino declares "Star, director and technician a trio of success." The publication says recognition must be given the picture's real photographic merits, especially in the close-ups of Amanda Ledesma, the star, "whose expressivity, thanks to John Alton, appears emphasized throughout the production. The star makes no secret of the fact that she owes her success to the director of photography.

"The technical end of the picture, in charge of which was John Alton, deserves praise. Alton already is known for his previous work here. He returns to our studios with more experience and proves to be a real artist of the light in the closeups of Amanda Ledesma."

Another declares "The photography translates into praise for John Alton, director of photography of real merits."

Still another digs in to the point at the start, saying "Photography excellent."



Photographic Arts Building, Balboa Park, San Diego, home of the Photographic Arts Society of San Diego



# James Wong Howe Wins Honors for His Photography on 'Algiers'

JAMES WONG HOWE, A.S.C., son of China's Kwantung, but an adopted son of Uncle Sam's West Coast since he was six years old, was awarded the photographic honors in the Hollywood Reporter's poll for June releases. The awarding authorities, according to recent custom, were the local, national and international correspondents stationed in Hollywood.

The subject on which the correspondents bestowed their approving nod was Walter Wanger's stirring tale of "Algiers," drawn from "Pepe le Moko," French production which in turn was adapted from the novel by Detective Ashelbe.

The balloting once again was marked by the tendency of the correspondents to bracket their decision on "best photography" and "best production." For just exactly that was what they did with "Algiers." They did more than declare their belief the subject was the best of the month.

Also they voted that the best acting performance of the month was contributed by Charles Boyer, the player who with such unerring skill and finely balanced judgment interpreted the part of the well-to-do thief trapped within the boundaries of the Casbah, native quarter of the French territorial city—safe from restraint so long as he remained within the borders but practically certain of arrest as soon as he stepped outside it.

## Four Firsts

Gene Lockhart, in the part of the Informer, was the fourth award given on "Algiers," his bouquet being for the best supporting actor performance. Second behind him was Joseph Calleia, who so fascinatingly played the Inspector of Police whose integrity as a policeman was not less keen than his regard for the thief.

Danielle Darrieux for the best actress performance in "Rage of Paris" was given 69 percent of the total number of votes cast. Jimmy Howe by reason of the favoring preponderance of votes in his classification was runner-up in the "no competition" class.

Those who have seen the picture will understand its photographer had no picnic, no walkover. A glance at the floor map of the Casbah set, shown on the opposite page, will convey to the camera-wise the assurance that here was no gilded palace with spacious halls, with high ceilings and wide-spreading rooms.

Rather was it an intricate arrangement of streets and halls and rooms, of alleyways and near tunnels. The widest

By GEORGE BLAISDELL

street was twelve feet. The average, in width, was nearer four or five feet. From stage floor to an elevation sixteen feet higher there was a maze of terraces and stairways. The very nature of the ground over which the camera was obliged to travel made dolly shots in the accepted meaning of the term something out of the question.

Consequently there was built a monorail system capable of supporting a camera carriage and an operator and crew. The cameraman estimated the extent of the system to be somewhere between 1500 and 2000 feet in length. It was so constructed the camera could be moved down a main street or diverted at intersections without in any manner interfering with the flow or rhythm of the camera movement.

By reason of the monorail being in the centre of the "fairway" it made pos-



James Wong Howe

sible the lighting of both sides. Then inasmuch as the camera turned on a pivot, could "turn on a dime," so to speak, it made possible the reaching of any visible objective by the lens.

Drawings and plans of all settings called for by the story were prepared by Art Director Alexander Toluboff and his staff. Toluboff was aided in his preparation of the drawings and set models by the fact that he had spent some time in Algiers several years ago, studying the architecture of the city's buildings.

Each setting was made the subject of an elaborate blueprint, since even the most unimposing "set" must be constructed as carefully and as accurately as a residence or other building. Later triangular camera angles were added to the blueprints.

A total of 48 sets was required for "Algiers," by far the largest being an accurate replica of an extensive section of the Casbah, where 85 percent of the play's action takes place. This remarkable set was a three-level labyrinth of hilly, cobbled streets and narrow passageways, with stairways leading to the flat rooftops and dozens of picturesque bazaars jutting into the roadways. So steep were the grades in this setting that the street level rose a total of 62 feet within its area and the hordes of people which later were to throng the tortuous passages made necessary an absolutely rigid construction.

As each set was completed, the crews of Guy Gillman, head of the Wanger electrical department, surmounted it with platforms swung from the rafters of the vast sound stage, and on these catwalks were secured the banks of enormous studio lights necessary for illumination. Electrical current used on the Casbah set alone cost thousands of dollars and was sufficient to light a populous city.

## Matching Backgrounds

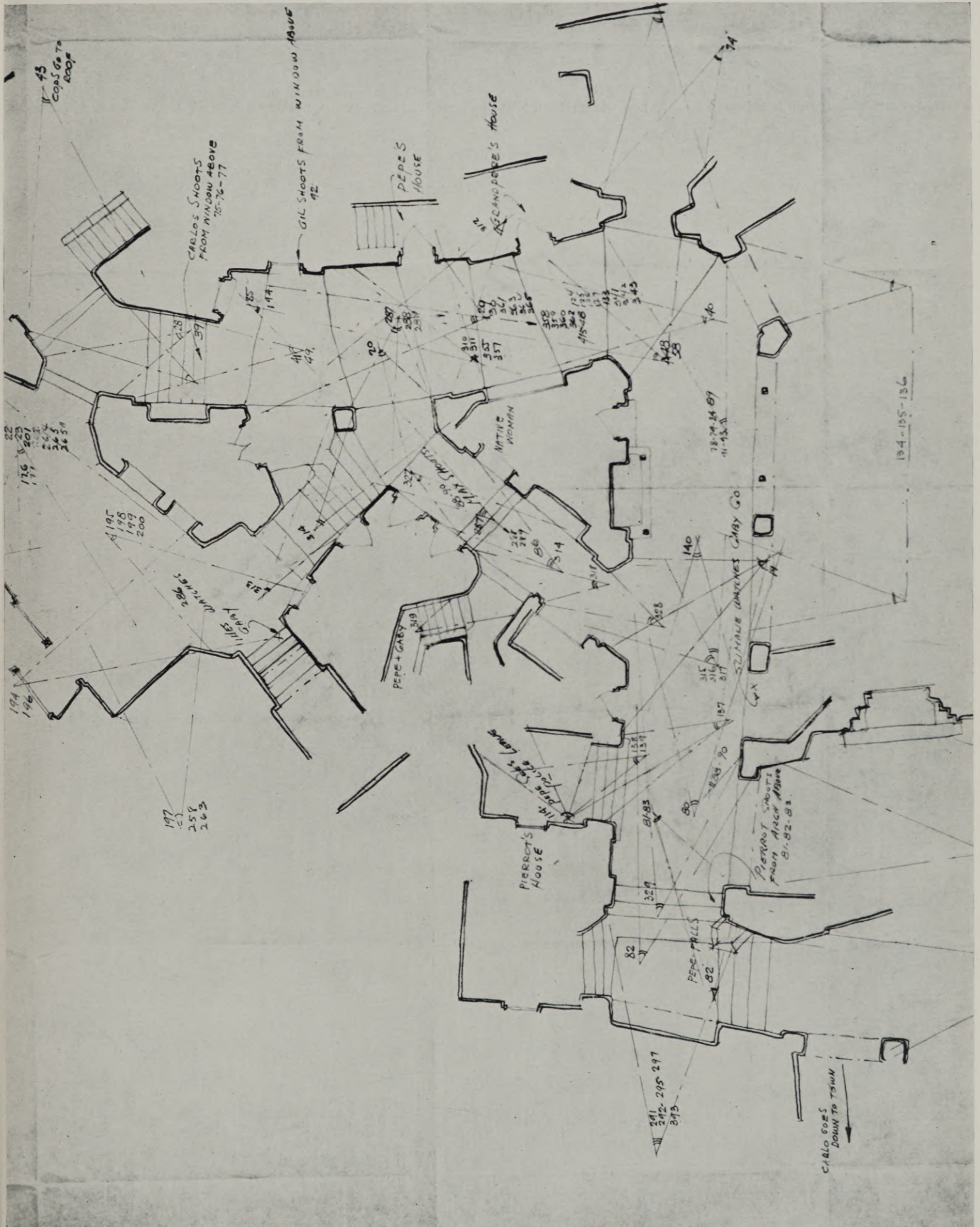
One of the difficult problems was the lighting of sets, of streets, so as to make them look real. This was accomplished by overhead lighting employing soft reflector lights, the same as in the sunlight on location. "We were matching the authentic African sunlight shots that had been sent to us by Lloyd Knechtel, my fellow A.S.C. man," said the cameraman.

"To achieve this we knew it would be necessary to employ one apparent source. Simulating sunlight over a considerable area was possible with arc lamps. It was necessary, of course, in matching light intensity and using many lamps at no time to cast more than one shadow, because Old Sol is very particular about that little thing when on the job himself.

"Outdoors in Africa Old Sol casts one shadow. Indoors in Hollywood don't try to represent him as casting plural shadows."

Then again in the shots touched by sunlight it was imperative to maintain the atmosphere of humidity, of matching the deep haze in the backgrounds, the cameraman continued. To accomplish this end resin was burned on the studio floor. This gave forth a dry atmospheric haze,





*Floor plan of Casbah set in Walter Wanger's "Algiers." From files of Art Director Alexander Toluboff*



more in keeping with the examples that had come from Africa.

Usually employed is mineral oil, but that gives out a reflective surface, a shiny one. In this case it was necessary to get the heat of the desert, of crowded streets, of pavements on a hot day.

The resin delivered what it had been asked for. To certify to that effect were prepared the electricians, perched up among the rafters, where without delay ascends all the spare heat. Speaking not altogether loosely, they pretty nearly smothered.

The actors, too, while most uncomfortable, unconsciously "felt" the atmosphere. They really were in Algiers. They needed no instructions from the directing staff to be aware of it.

#### Praises Cromwell

The photographer of "Algiers" paid his respects to Director John Cromwell as one who really understands the mechanics of the camera.

"It is a gift not unanimously enjoyed by all directors," said the cameraman, "that is, according to my observation. To really know when to move the camera and when not to move it constitutes one of the major attributes of a director. In the same category I also would include William K. Howard, William Dieterle, W. S. Van Dyke and Fritz Lang.

"I consider it to have been a privilege to have worked with Mr. Cromwell. He is a great director and possesses a keen understanding of the motion picture and its mechanics—in his use of these latter

in making them tell the story of the former.

"More truly of 'Algiers' than of any picture I have known may it be referred to as a 'motion picture.' Probably 85 percent of the scenes were made with the camera in motion. The dialogue was not that of persons standing still. The camera was in motion, and so moving that you never became conscious that such was the fact."

The cinematographer said it was his conception of the ideal that the person out front should be under the illusion of a moving situation, conscious only he is looking on mounting action, relentlessly progressive, its grim fate inescapable, and motivated in such manner the observer does not sense how it is obtained but very much does feel its influence.

Unconsciously the speaker turned back several leaves in his book in almost his next sentence when he referred to the importance of timing—his unconscious allusion to an occupation with which as a very young man he had for a short time been somewhat well acquainted.

#### Timing's Importance

"Timing is one of the most important things in camera work," he declared. "A prizefighter times his punches, a runner times his pace, actors and actresses time their action and speech, the great story teller times his climax, the director times his scenes and the cameraman times the movement of his camera."

It was not difficult in following the talk of the cameraman—and he was speaking

freely, without the reserve that usually is accredited to him—to discern that unconsciously he was endowing his camera with his own attributes.

"It is imperative for the camera to move along with the story just as if it were a human being," he went on. "It must follow a rhythmical pace, fast or slow or medium as may be indicated by the cast. But it must always be just on the spot, not ahead of or behind where it should be—it must be controlled by the timing instinct."

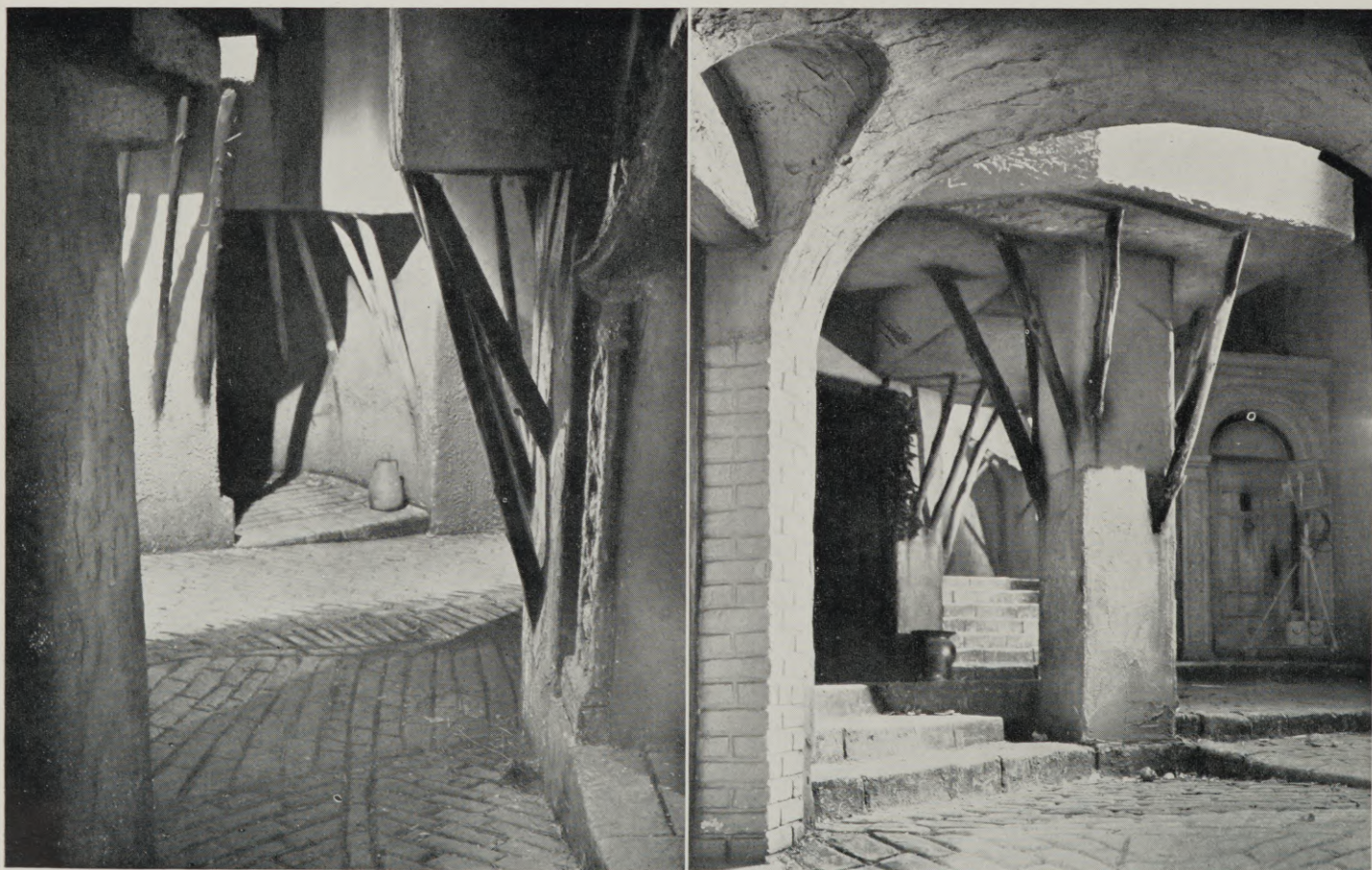
The speaker brought up the importance of one of the more humble members of the camera crew in the making of a picture—the grip, that all-around general utility man who moves the camera carriage when it is in action.

"It is a difficult thing to teach these men just how to control a camera movement unless they have within them that sense of tempo. Really it is a gift.

#### Honor to Grip

"Many may not understand the responsibility of every member of a camera crew when the camera is in action in an important and impressive scene. Each one has his own part to play, like each member of an orchestra. Those on the crew who have the 'feel' can make that camera perform, fast or slow; can make it slide, in rhythm, like in a waltz.

"Personally in my share of the making of 'Algiers' I was most fortunate in having the assistance as grip of one of the most outstanding in that capacity of any one I have known. In 21 years in



Two of the Casbah sets used in Walter Wanger's "Algiers"



*Because of cobblestones and terraced streets James Wong Howe, A.S.C., and his crew could not push their cameras along the narrow winding roads of the historic Casbah section in filming Walter Wanger's "Algiers," starring Charles Boyer, and so an overhanging camera trolley car was created. Here is Director John Cromwell and Howe with Boyer and Hedy Lamarr imposed in the foreground and Sigrid Gurie in a grand stand seat watching the colorful action of the native quarter as she rides on the suspended camera trolley.*

this business I have never seen his name exploited in the previews, but I am sure he has contributed materially to the making of many excellent pictures. I am talking of Buz Gibson, a Wanger employee."

The speaker praised the cooperation of his operative cameraman, Arthur Arling, whose adherence to the plans adopted in rehearsal had been 100 percent and whose keenness in action had helped in a major way in the general result.

Jimmy Howe was looking out across the widespreading lawn in front of the A.S.C. home. He was speaking in the manner of a man thinking out loud.

"A camera is a piece of very delicate and sensitive high precision machinery," he was saying. "It is loaded with film and it has but one eye. It can't talk back—if it only could—it is most exact in doing just that which it is told. It will create what you ask it whether your instructions be intelligent or otherwise.

"Always what it accomplishes is entirely up to the director and the cameraman."

#### Whipped Major Handicaps

Jimmy Howe has accomplished much under what many men would have considered a major handicap. He was brought to the United States by his father with other members of his family. The father had preceded his brood and returned for it after having established himself.

It was in Pasco, Washington, the lad went to school, in spite of the fact he knew no English. He was the only Chinese lad in the school. What at first he thought of the American pupils and what they thought of him seemed to be more or less mutual, as Jimmy tells the story today. But they got along.

Later Jimmy was accepted as one of themselves by the boys on the other side of the tracks. Then his father accepted the offer of a friend in Ferndale, Oregon, to take the lad home with him to go to school there and to work on the farm.

When Jimmy's father passed away the lad went to Walla Walla to live with a friend with an athletic bent. Before long the youngster was wearing the gloves. He made progress in fighting and in the making of money, but his mother protested, holding up to the lad the memory of his father, and the young prize-fighter gradually relinquished his interest in the gloves. He had won some good



battles and was making a name as a pugilist.

His first work in a studio was at Paramount as an assistant to Alvin Wyckoff at the rate prevailing in those days of \$10 a week. He bought a still camera in a pawn shop. With it he made pictures of Mary Miles Minter, which so pleased the young actress she suggested he be allowed to shoot first camera.

#### Becomes Cameraman

At the end of three years as an assistant he was accordingly installed as a first cameraman at a salary of \$50 a week.

After several years with Paramount he moved to MGM. Following a successful stay there he decided to take a vacation in the form of a trip to China. He was eight months away and returned to Hollywood to discover sound had entered during his absence.

For a long time he was without employment, for that is the way in Hollywood. His fortune had evaporated, but he

did not let go of his intense interest in matters with which he was concerned. He studied and kept abreast of things that were new.

His fortune turned as his money dwindled. His first picture was the reopening wedge, and his success has been continuous ever since. One of the recent pictures he has photographed is "The Adventures of Tom Sawyer," one of the four credited with the beginning of the surge to color.

His success in the making of "Algiers" is no surprise to those who know his manner of working—his thoroughness, his striving for realism, his sincerity—in plain English, his honesty in his effort to translate to the screen life as it is lived.

It may be a part of this story to remark in conclusion that since Jimmy Howe completed photographing "Algiers" he has been signed by Warner Brothers on a two-year contract. The first production under that agreement is Kay Francis in "The Curtain Call."



# Dr. Carter Outlines History of Search for Permanent Photograph

By DR. ROBERT W. CARTER

of the Taylor-Sloane Corporation of New York

## Part II

**F**INISHED images were thoroughly tested for light, heat, moisture, abrasion, acids and alkalines. From the years 1915 to 1924 a great deal of time and expense were used in developing apparatus for the making of permanent photographs on metal in commercial quantities.

February 8, 1924, we submitted our photographs on metal to the physics departments of the leading universities, one of which at that time was headed by the celebrated Dr. J. C. McLennan. Dr. Silberstein of the Eastman Kodak Company was present at the series of tests that were made with X-ray, using 45,000 volts and 10 milliamperes.

Dr. McLennan used every method known to science to bring about the fading or discoloration of the image, and after the tests declared that as far as any known method was concerned the prints were permanent.

### Praise Images' Beauty

We should say at this time that the photographic world, including art critics both in America and abroad, was unanimous in its praise of the beauty of the photographic images on metal. Rector Charlesworth in one of the leading journals stated:

"The photographs by this process have an appearance of beauty and richness that cannot be obtained on paper. The dark, lustrous image stands out from a background of silvery, satin-finished metal and produces an effect of rare beauty and distinction."

We raise this point because the beauty of the daguerreotype print was equaled, if not surpassed, by this modern process.

The process was then sold to European interests and operated in a commercial way. Those of you who are interested in further information about this phase of development may be referred to the *British Journal of Photography* of April 12, 1929.

In that issue Dr. Brown, the editor, gives a detailed account of his visit to the plant where permanent photographs were being produced on metal in commercial quantities. Dr. Brown gives it as his opinion that this photographic process on metal marked a development of widespread commercial and artistic possibilities. We completed our research on the development of color images in the year 1931.

### Making Records Permanent

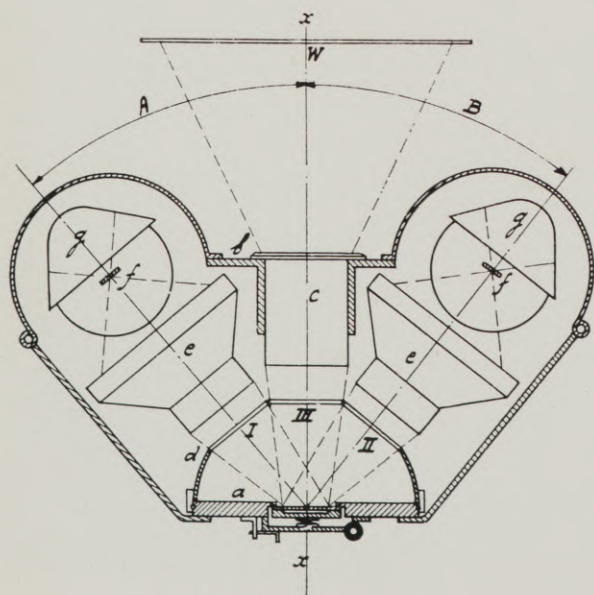
It was during the year 1929 that we were consulted by the Vatican Library

on the advisability of the reproduction of manuscripts and codices of the early centuries. These priceless writings were on vellum and sheepskin. We had already reproduced the writings of Victor Hugo on thin sheets of metal.

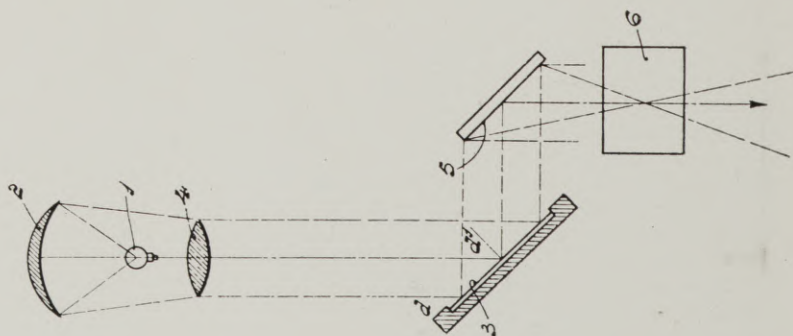
The possibility of using metal film and projecting the same in the form of moving pictures became a definite possibility. In short, the whole subject of the permanent record of letters, books, manuscripts, etc., became a paramount consideration.

We had made photographic images on metal as thin as .004 of an inch as far back as the year 1914. The problems to be solved were physical, mechanical, and chemical. First in order to get a strip of film on metal that would pass through a projection machine, it had to have properties we had not considered in ordinary photographic prints.

To pass through the sprockets in any projection machine the sides of the film had to be pierced, and the metal strip during its passage through the machine had to be flexed and passed through a severe tension, together with high temperature. We also found that the formulae and technique that were suitable for making first-class prints on



No. 1



No. 2



flat sheets of metal were useless for making photographic images on continuous strips of metal.

By varying two of the metals in our original alloy we were able to get a metal film base with a high reflective index and with suited tensile strength that stood the stamping and the strain of the projection machine indefinitely.

The change from flat sheet to strip also involved new chemical and mechanical tests. These were overcome one by one, and in 1932 we had a metal film that would give an image suited to motion pictures.

#### Unaffected by 700 Runs

The high light gave a reflection as efficient as 93 per cent with standard optical system and 25 ampere arc light. In our mechanical tests we ran the metal film constantly 700 times through the sprockets, and, on critical examination, we found the film unaffected by the heat and mechanical strain.

It should be remembered that a thousand feet of cellulose film weighs slightly more than a thousand feet of this strip. To those interested we might also say that the basic cost of our uncoated metal against that of cellulose film is less than half. This does not mean that the final price to the consumer will be less than that of cellulose film but that the consumer is getting a film that will give him greater service, combined with positive permanence.

For a large class of work the images may be used on both sides, thus giving the consumer considerable saving in time, money, and space. Metal film may be made in 16mm or 35mm or any practical widths.

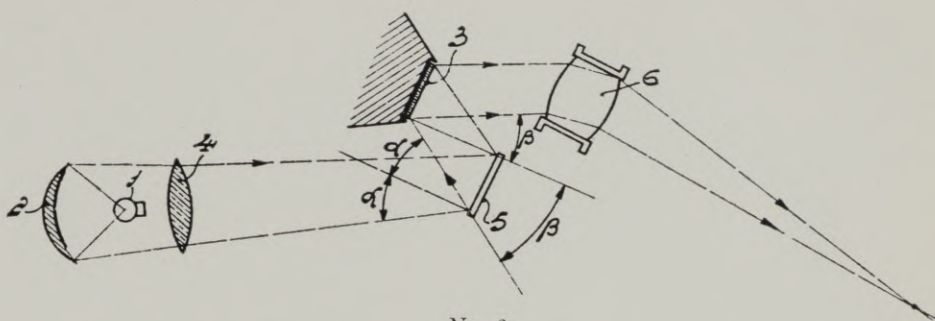
#### Projection from Metal

We now come to the most controversial part of our paper, the projection of the photographic image from metal. We find on investigation that as far back as the year 1918 projecting apparatus was built for reflecting images from opaque surfaces.

We also find that in the patent office in France and Germany there are many patents giving methods of making moving picture film on metal. These patents largely belong to an era when motion pictures were just coming into vogue.

The question naturally arises, if metal had any advantages as a motion picture film, why was it not developed, and why is it not in commercial use at the present time? We have investigated in Germany and France and all over the civilized world and cannot find any company engaged in the production of motion picture film on metal. We cannot give a complete answer to the seemingly unanswerable question, but we can give two basic developments in our research that will largely satisfy the mind on this point.

First, the films on metal described by previous workers usually mention steel as the base, in some cases silver, and in some isolated cases, aluminum. Our



No. 3

investigation proves that steel is not a proper medium for a moving picture film. Ordinary carbon steels crystallize in their passage through the sprocket and the heat of the projection machine.

They are not compatible with photographic emulsions and developers. Stainless steel, on the other hand, is much too high in price and is difficult to keep from buckling and causing distortion with sound reproduction. We will not consider other metals because, for one reason or another, they have been eliminated.

#### Economical and Light

The alloy we have evolved is economical in price; it is light in weight; and it is affected by the photographic emulsions or chemicals; and it has the chief quality absent from the metals experimented with by previous workers.

Our alloy has physical, mechanical, and chemical properties that yield a flawless, close-grained, flexible surface. This surface by modern polishing process yields a reflective index of 92 per cent. It is this high reflectivity, combined with unusual flexural strength unknown to early experimenters, that gives part of the answer to the question under consideration.

The second fact overlooked by the early workers was faulty optical system. We have all examined the principle of episcopic projection; we are all acquainted with the Bell optical system and the other simple devices for projecting postcards and other objects with opaque surfaces.

Going a little further into this field, we find various engineers trying to get greater illumination by doubling the intensity of the light, using more powerful condensers, and other methods to illuminate the film to get a properly lighted image on the screen. We find, however, that they all worked on the principle shown on our slide, and all failed for the same reason.

#### Efficient Optical System

You will notice that this slide gives a drawing of a very efficient optical system based on a diffused light. You will notice that in figure G we have a highly polished parabolic mirror. Figure F is two powerful arc lights, using say, 25 amperes. This sends an intense ray of light through the condensers marked E.

This is then concentrated on the film in the slide marked A. Both lamps on the left and the right side of the machine are sending light directly through

the condenser to the film. The light ray then passes out through the objective lens C to the projection screen W.

This system is the most effective of this type that we have been able to discover. In spite, however, of high powered lamps, the best of condensers, and the correct angle of incidence, the image on the screen was not up to modern standards in motion picture. Anyone in the audience who has acquaintance with the general laws of geometrical optics will recognize why the image on the screen by this optical system was not satisfactory.

The rays of light passing from the high-powered lamps through the condenser to the film were diffused when they impinged on the reflecting surface of the metal. Measurement of the light before reaching the film and after reaching the film would show a probable decrease of 30 per cent. These are the two basic reasons why metal film has failed to meet the exacting standards of modern projection.

#### Light Loss of but 7 Percent

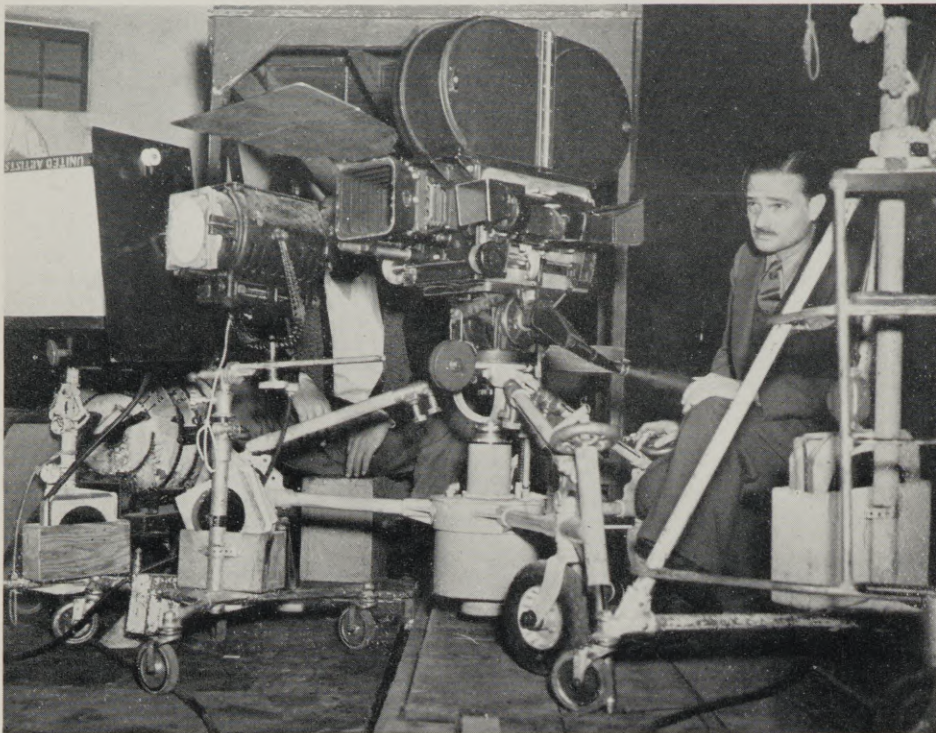
We will show two more diagrams that will illustrate an optical system that gives a reflection of light without losing more than 7 percent in transmission. If you examine the diagram critically, you will see that our source of light is marked with the number 1. The figure number 2 is a highly polished, concave mirror. This reflects the light through a properly constructed condenser, or lense, directly on to the highly reflective surface of the metal film in figure D.

It must be observed here that the angle of incidence and the angle of reflection are of equal value. We are not diffusing light now, but we are reflecting light in a directional manner. The image is reflected now from the member D to a highly polished mirror which is on a 25 degree angle from the image carrier.

The mirror reflects the light again at a 25 degree angle out through the objective lense to the screen. You will observe that in this optical system we have used only one mirror of reflection, and we have reflected all the light rays in a directional manner. This has eliminated diffusion completely. In diagram number 2 we illustrate this principle and an optical system which may be used for projecting long distances and giving large images.

The principle on this diagram is the





Gregg Toland, A.S.C., sits at camera mounted on hydraulic tripod, one of the latest conveniences to be installed at the Samuel Goldwyn Studio. A great advantage of the innovation is the ability to combine in one tripod the range formerly achieved only with regulation and low equipment; in other words, it avoids shifting the camera from one to the other. With its possible elevation of the lens level to 11 feet 6 inches from the floor it does away with much changing to parallels. The foundation for the innovation is a Mole-Richardson tripod with the hydraulic apparatus applied by a company specializing in that work. The cameraman shown in the picture, for fourteen years a fixture to the Goldwyn studio, is enthusiastic over the hydraulic appliance. In furtherance of the principle Goldwyn is having prepared for studio use a hydraulic parallel, the first of which will have a platform maximum twenty feet.

same as that of diagram number 1. We are reflecting light in a directional manner and so dispose the elements that the light rays fall at an angle of less than 25 degrees on the photographic image. This image substantially reflects all the light rays that fall upon it. There rays are reflected by the mirror at the same small angle.

The angle of incidence and the angle of reflection of the rays reaching the mirror are of equal value, and the loss of intensity of light is thus reduced to a minimum. We find in actual projection that by arranging our optical system to convey light in this directional manner we get a value up to 92 per cent at the screen.

#### Metal Film Advantages

In conclusion, the metal film developed by the Carter processes has all the essentials for widespread commercial use.

It is lighter in weight, less in cost, and the fact of its permanence and durability has been tested thoroughly over a long period.

The metal does not oxidize, discolor or change.

The obvious advantages are positively no fire possibilities at any time under any conditions and the complete elimination of shrinkage.

The possibilities of melting or tearing

in the projection machine are negligible.

The elimination and tolerance differences over the entire film prevents quaver or distortion of sound or image.

Printing from the negative may be done by contact or by optical means.

The use of color films on metal has definite possibilities because of the possibilities of accuracy, the elimination of shrinkage and stretching elements, and the factor of long life.

To everybody connected with the film industry, the Carter metal film means personal safety from all fire hazards.

When coated on both sides it means a saving of storage space and economy per lineal foot. With the perfection of projection machines based on the previously named optical system, it will mean images equal to the best by transmitted light, together with an almost third dimensional effect peculiar to this metal film.

Finally, the elimination of fading, scratching, or melting, together with the fact that the film may be safely used in any location, constitutes this modern metal film a major development for projection in the home, for permanent records, and for the motion picture field.

Another article in this series will appear shortly, possibly in September.

## Process Corporation Starts Business in New Structure

THE Motion Picture Process Corporation, following the completion of its building at 1117 North McCadden place, has entered actively into studio and commercial work in both miniature and process. E. Roy Davidson is in charge of the technical department, aided by Harry Zech, A.S.C. John Gentile is president and Mario Castegnaio is vice president and treasurer.

The building has a floor area of 60 by 150 feet. There are several Flat-light screens, three of which are 8 by 10 feet, 10 by 12 feet and 12 by 18 feet. The equipment includes the latest Newmatz projector. It is equipped with a device whereby the cameraman at the rear of the screen supervises the focusing by remote control. The two stations also are connected by interphone.

The building has its own generating plant of sufficient capacity to handle any amount desired. The stage is sound-proof and the floor is of concrete. There is a darkroom and also a library devoted to black and white and color photography. There are bathrooms and two modern dressing rooms of sufficient size to take care of a large cast if necessary.

The lighting system consists of an installation of the latest Bardwell and McAlister lamps.

By way of comparison there is on the floor one of the former style camera boxes 8 by 8 by 8 feet in cubic capacity. With the Newmatz the cubic contents is reduced to 2½ by 5 by 6 feet—a cut from 512 to 75 cubic feet. The newer equipment may be handled by one man in comparison with the several needed with the former.

## Swiss Magazine Sponsors Photographic Competition

The publisher of Camera, illustrated photographic monthly, C. J. Bucher Ltd., Lucerne, Switzerland, invites entries for its International Competition of Artistic Photographic Pictures 1938. Entries close September 1 of this year. Prizes range for the first five from 40 frs. to 20 frs. Also there are two sixth prizes, at 15 frs., and two seventh at 10 frs.

#### CONDITIONS

The following should be observed: All positive processes will be accepted, except hand-coloured pictures; each competitor may submit an unlimited number of pictures; the pictures should be sent as "Printed matter without value" and addressed to:

The Publishers of "Camera"  
Photographic monthly review,  
C. J. Bucher Ltd.  
Lucerne (Switzerland),  
Zürichstrasse, 3/5

The competitor consents to the reproduction in Camera of his submitted pictures. The pictures should be unmounted if possible. On the reverse of every picture the name and address of the competitor should be written and also details of the negative and positive process. All above particulars should also be noted on the entry form.



# Finely Equipped English Studios Are All Set for Industrial Jump

By ELMER C. RICHARDSON, A. S. C.

Foreigners visiting Hollywood's studios during the recent production slump could hardly have taken home with them a true impression of Hollywood's production methods and activities. During my recent visit to England I felt myself in similar case, for I arrived during a comparable cessation of production.

Nevertheless, I took away the impression that England is remarkably well equipped for production, both in man power and in studio equipment, and awaits only her industry's revival from the depression that followed the British film boom of a few years ago.

This revival, according to all indications, is definitely in sight. The British film industry is becoming well reorganized after its over expansion and the long heralded making of British productions on a worth while scale by Hollywood companies seems definitely materializing at last.

Two notable British-made films of this nature are already on release: M-G-M's "A Yank at Oxford" and Twentieth-Century-Fox's "We're Going to be Rich." Neither of these nor the several other projected features in any way can be compared to the "quota pictures" of a few years ago. They are major productions in the best sense, made and planned for the world market.

## Quota Law Settled

In many quarters the recent British production slump has been partly blamed on the fact that during the past year there was much indecision as to what would be the terms of the new British quota law. This finally has been settled. Its terms should in many ways be beneficial to the film industry on both sides of the Atlantic.

Instead of the old provisions for quotas in terms of footage or number of productions the new act sets up standards of budget and quality by which these films are now to be judged. A single production, budgeted at double the specified figure, will under this new law count for two less expensive productions.

The new standards should be beneficial to both the British and the American film industries and to the theatre going public everywhere.

Such British studios as I had an opportunity to visit compare more than favorably with American plants. Few if any are as large as our larger studios, but in both plant and equipment they are extremely modern.

Several of them, like the Denham and Pinewood studios, have been built from the ground up within the last three or four years. Others, like Warner Brothers' studio at Teddington, have been so extensively remodeled and expanded as virtually to be new plants.

As has been frequently mentioned before, the equipment in these studios would in many ways strike a familiar note to American eyes. Camera equipment is largely De Brie, Bell and Howell and Mitchell.

## American Lights

The latter are in many studios housed in very familiar-looking blimps similar to those used here by Paramount and Twentieth Century-Fox. Technicolor equipment and methods are becoming almost as familiar in England as they are here.

Cinematographers who worked in Eng-

land before the film boom often commented that the lighting equipment then available did not compare favorably with that to which they were accustomed in Hollywood.

Today this has changed completely. Much of the old, German-made equipment of former days has been discarded and replaced by familiar lighting units of American design. The newer plants, of course, have been fully equipped with modern, Hollywood-style equipment.

A very gratifying proportion of this modern lighting equipment is the product of my own firm, Mole-Richardson. Since so many of the British studios have been equipped or re-equipped within the last few years, the newer designs like the Solarspot in its various sizes are to be found in greater profusion than is common in many American studios,

(Continued on Page 327)

*Gregg Toland standing beside the hydraulic tripod somewhat extended, although perhaps several feet short of what it is capable of reaching at its limit of 11 feet 6 inches. He is shown on the floor of the Goldwyn Studio, where he is photographing Gary Cooper and Merle Oberon in "The Lady and the Cowboy."*





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# *Restrictions Hedge Quints When They Are Brought Before Camera*

One Hour a Day Is Maximum Time They Are Permitted to Work in Pictures, from 11 to 12 Noon; Only Most Moderate of Electrical Current May Be Employed, While Reflectors Are Barred—Cameraman Clark Reverts to Primitive Day Customs Without Sacrifice of Desired Photographic Results

By DANIEL B. CLARK, A.S.C.

*Supervisor of Photography, Twentieth Century-Fox Studio*

UNTIL some unusual circumstance forces him to do without them a cinematographer seldom realizes how much can be accomplished without the deluxe refinements of modern studio methods and equipment.

A case in point is that of filming the Dionne quintuplets. I have just returned from Callander, Ont., where for the third

time I have had the assignment of photographing these celebrated babies for a Hollywood production. Despite the generous cooperation of that remarkable man Doctor Dafoe and his associates, the task of filming the quints is a real technical problem, due to the unavoidable restrictions which safeguard the babies.

For four years Doctor Dafoe and his

staff have performed a series of medical miracles in keeping these children alive and healthy. It is only to be expected, then, that moviemaking should be subordinated to questions of physical safety for them.

Today, though the quints have grown to healthy, active four-year-olds, they  
(Continued on Page 324)



*Daniel B. Clark, A.S.C. (left) and Director Herbert Leeds of 20th Century-Fox's "Five of a Kind" show Dr. Allan Dafoe the workings of a studio camera*



# Camera Tells Story of Precision Engineering in Art Reeves Plant

**P**RECISION engineering and manufacture on an enlarged scale are the outstanding impressions carried from a visit to the new plant of the Art Reeves Motion Picture Equipment Company in Hollywood. Since moving into new and larger quarters early in the year this firm has so increased production as to become one of the nation's larger makers of sound recording and laboratory equipment.

Art Reeves, the firm's founder, continues to head this growing organization, and has completely reorganized both staff and manufacturing facilities. With him, as chief engineer, is L. E. ("Les") Taft, radio and recording engineer formerly with the General Service Studio and other film and radio organizations.

In the new location the Reeves plant now occupies more than 7,000 square feet of floor space, and is becoming an increasingly self-contained organization, with research, engineering and manufacture centralized within the one plant.

## Glow Lamp Making

An example of this centralization may be found in the manufacture of the well known Reeves' "Line-O-Lite" recording glow lamp. This firm is one of only two in the United States making recording glow lamps, and every stage of manufacture, from blowing the glass envelopes

and element supports to the completion and testing of the tubes is conducted within the one plant.

Ceaseless research is carried on with a view to further increasing the efficiency of these tubes. In addition to the gases ordinarily used in such lamps, Reeves and Taft are experimenting with tubes charged with virtually every other available gas, including several rare and costly ones such as Xenon, Krypton, etc.

An interesting instrument used in the manufacture of these tubes is a 35,000 watt radio-frequency furnace. This device, by means of huge, water-cooled radio transmitting tubes, generates radio frequency impulses of nearly 1,000,000 cycle frequency.

The recording tubes, while being evacuated, are subjected to these frequencies, which heat the metallic filaments and grids to incandescent heat by induction, thereby vaporizing any occluded gases or other impurities in the metal.

When completed the glow lamps are tested both electrically and spectroscopically, to assure uniform frequency response and actinic emission.

## Johannsen Gauges Marvels

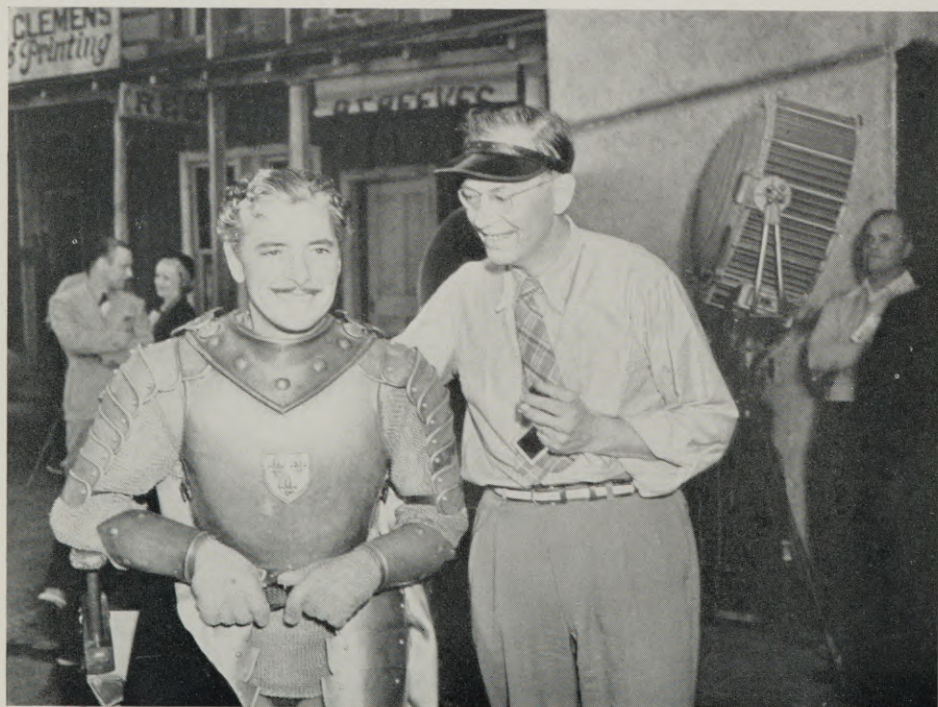
Other remarkable instruments used in manufacturing and testing the Reeves recording equipment, developing ma-

chines, sensi-testers and accessories are the celebrated Johannsen gauges, one of the few sets of such gauges in use in the west. These, as is well known, consist of a series of metal blocks, made with such incredible accuracy that any number of them can be placed together to form a measuring surface of any desired size. When placed together

## Descriptive of Scenes on Opposite Page

1. Display room of new Reeves plant, showing automatic developing machine, sensi tester and other equipment set up for demonstration.
2. Display room and offices.
3. Blowing the envelope of a "Line-O-Lite" recording glow lamp.
4. Shaping a recording lamp envelope.
5. Assembly of glow lamps.
6. Group of glow lamps being evacuated.
7. Huge 35-KW radio frequency tube of the radio frequency furnace or "bombarder."
8. Generating unit of furnace.
9. Spectroscopic tests of glow lamps.
10. Electrical test bench.
11. Set of Johannsen gauges—accurate to three millionths of an inch.
12. Assembling microphone pre-amplifiers.
13. Portion of shop area.
14. Battery of sensi testers being assembled.

*Star and Cameraman—Ronald Colman, playing Francois Villon in "If I were King," the Frank Lloyd production for Paramount, chats with Theodor Sparkuhl, A.S.C. between scenes. Sparkuhl also photographed "Wells Fargo," which Lloyd also produced and directed for Paramount release*



molecular attraction alone holds them rigidly as a single unit, precision-dimensioned to within three millionths of an inch. They are regarded as the ultimate in precision measuring instruments.

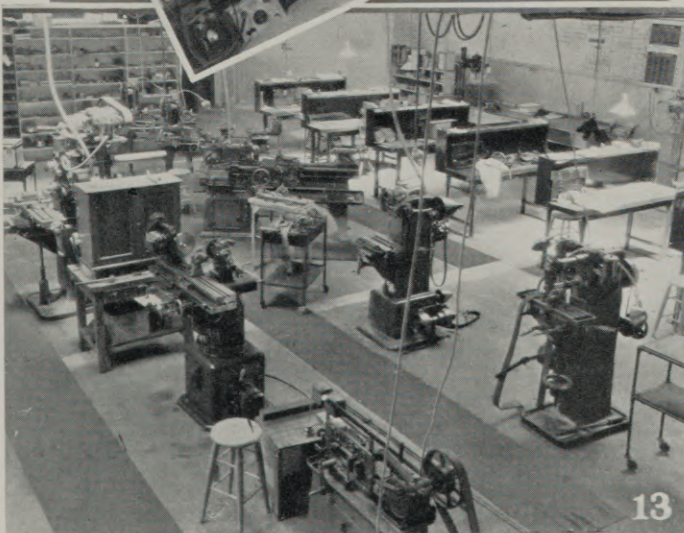
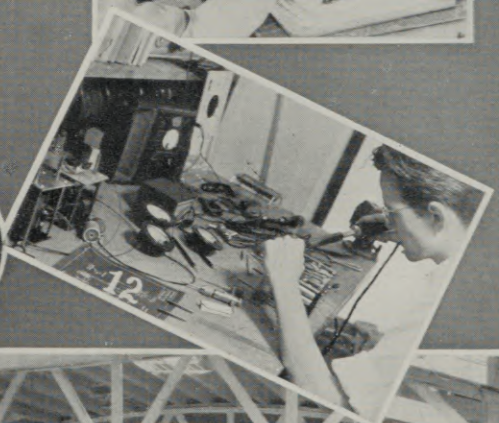
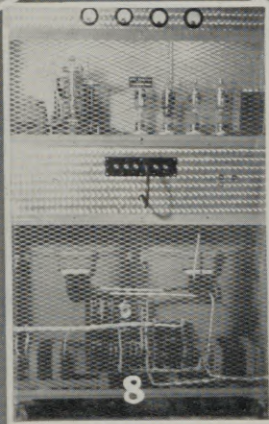
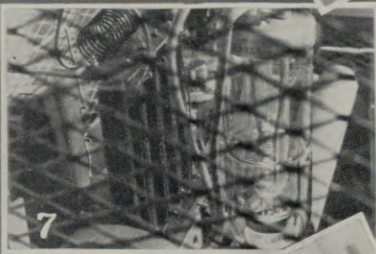
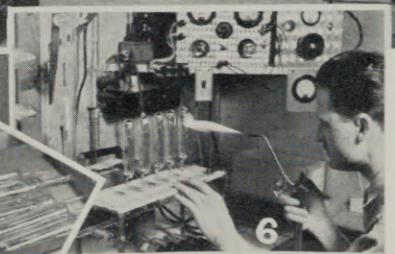
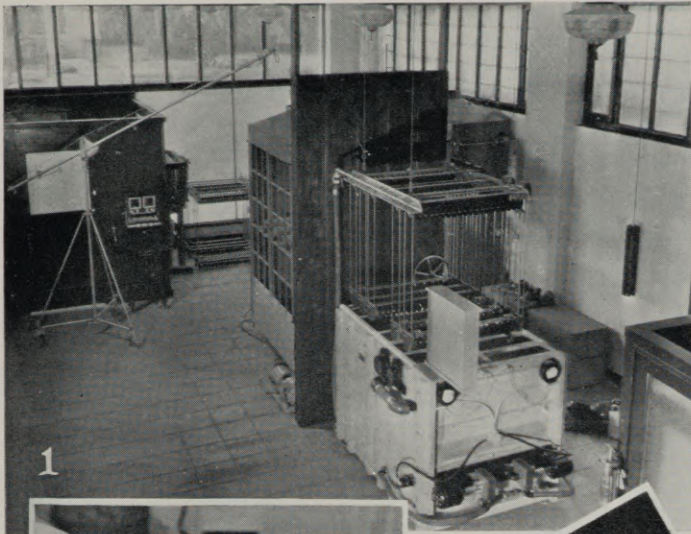
With these precision methods and the newly expanded production facilities, it is little wonder that Reeves' Hollywood-made recording and laboratory products have built an enviable name for themselves on the world market. Further outstanding developments are now "on the fire" and will be reported in future issues.

## New Keystone Projector

A new slide projector for black and white or color films, with a patented heat absorbing unit to provide sure protection against burning or buckling of the film, is now made available by the Keystone Manufacturing Company.

An efficient cooling chamber built into the slide projector acts as an additional safeguard against excessive heating of the slides and makes possible longer showing of individual transparencies. There are many other features of the new projector.







## Restrictions Hedge Quints

(Continued from Page 321)

are allowed no more time before our cameras than when they were babies. One hour a day—from 11 a.m. until noon. Since the next item on their daily schedule is lunch, twelve o'clock was very positively the end of our shooting day with the children. Nothing could interfere with that!

### Protect Quints from Light

The intensity of light to which the quints can be subjected is also strictly limited. We used the same eight lamps we had used on both previous occasions. These consisted of six Photoflood-equipped Mole-Richardson Cinelite floodlights and two smaller Photolites.

All of them were regularly diffused with a daylight-blue gelatin and a silk. Our electrical needs were so small that the current was supplied by a little 50-

ampere generator driven by a Ford motor!

Lighting—in the studio sense—with so limited an array of equipment seems impossible. My gaffer (electrician), who by the way was the only member of the technical crew who had not been to Callander on previous trips, when he first saw the extremely soft illumination our lights provided, was positive we could not get an exposure with so little light.

I must confess that unless I had known, from experience and tests, that it was possible to work with that little light, I would have doubted it myself!

But to do so one must forget lighting as we in the studios generally understand the term. With only six units to work with, and these diffused to the maximum of softness, the only type of lighting possible is a very simple, balanced lighting. As a rule, I used the daylight coming through the windows for my key light, and balanced the artificial light to that key.

It was also necessary to spread my illumination over a rather broad angle, so that we might be ready to take advantage of any unexpected action by any of the five youngsters, no matter where it took place.

### Reflectors Taboo

When the weather permitted, we did our filming outdoors, in the children's playyard. For this reflectors were of course taboo. An adult finds it hard enough to face a battery of reflectors; they would be unbearable to children's eyes. Therefore we used our Cinelites, diffused, as always, for "boosters."

This illustrates the intelligent way Doctor Dafoe cooperated with us whenever possible. At first mention the thought of "boosters" seemed taboo. But when he was shown the difference between the unaided natural lighting and natural lighting softened by boosters, he agreed that they were important. Then, when he saw with his own eyes that our lights, diffused with the blue "jelly" and the silk, were actually far less intense than the blue sky behind them, he willingly consented to our use of "boosters."

The weather, however, was none too favorable for exterior camerawork. Many days, when we had planned to work outdoors, the weather turned cloudy, and we had to transpose our scenes indoors. In many ways, this proved an advantage, however, for it gave us an opportunity to show many rooms in the hospital which had never before been shown in motion pictures.

We have scenes not only in the yard and the quint's playroom, but in their bedroom, dining room, and so on. Working in some of these rooms was a problem, for the largest—the playroom—measures but 17 by 20 feet, and the others are proportionately smaller.

Nonetheless, in spite of all these difficulties, we worked fast. One day, in our short one-hour working time, we made as many as 26 set-ups!

### Preparedness

Careful planning was naturally the secret of this success. Director Herbert Leeds and I went up to Callander a full two weeks before shooting commenced, not only to confer with Doctor Dafoe as to what should and should not be done, but to familiarize ourselves with the location—and to familiarize our five little starlets with us!

To my surprise and pleasure, the youngsters remembered me from my two previous visits, and unhesitatingly picked me from the group as "M's'ieu' Clark".

Each night Director Leeds and I would carefully plan the next day's work. When 11 o'clock came the next morning, we would have everything set up—camera and sound equipment ready, and lights on—while we, thoroughly disinfected and clad in surgical robes, caps and masks, awaited our five little actresses.

At work most of the communication between members of the crew had to be by pantomime, in a set of carefully arranged signals. This was necessary, not only because we were shooting every-

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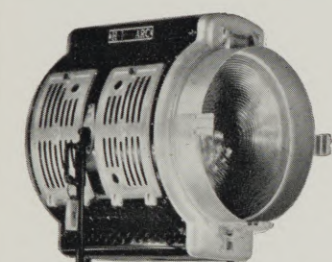
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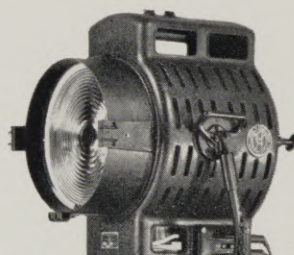
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*Cameraman and Director—Charles E. Schoenbaum, A.S.C., left and Director James Hogan look over clips from the first day's filming on "Sons of the Legion" at Paramount. The picture features three child stars—Donald O'Connor, Billy Lee and Billy Cook.*

thing in sound, but so as to avoid distracting the attention of our young players.

This time, too, our shooting was far less a matter of chance—of taking whatever the quints chose to do and hoping for the best—than ever before. As four-year-olds they have now grown old enough to understand when they are told to do definite things.

Thus each has very specific "business" to do, and to some extent definite lines to speak. They even sing a couple of little songs, one in English. And on several occasions they had to do their stuff on definite cues. The most experienced trouper could not have picked up his cues more smartly than these babies!

As a result, we are going to be able to use far more footage of the quintuplets in this picture than in either of the two previous ones. Before their scenes were more or less incidental, and their total released footage did not exceed 750 feet. In this picture, "Five of a Kind," their scenes are dramatically important to the story, and we expect to use more than 2500 feet of quints scenes.

#### Personalities Growing

Their personalities are growing more individually marked all the time. Doctor Dafoe exercises remarkable care to insure that each one has a chance to develop to the full mentally as well as physically. Really, enough cannot be said about the way this fine man has consecrated himself to the tremendous task of bringing these babies up to a normal life, mental as well as physical.

As I have said before, whatever success we may have had in obtaining spontaneous, natural pictures of the babies owes much to Doctor Dafoe, not alone to his cooperation and to the way he has raised them, but to the marvelous bond of mutual affection that exists between

the six of them. His mere presence inspires them, as might the presence of a loved and trusted parent.

And don't imagine that the little rascals walked through their scenes uncomprehendingly. One of the outstanding incidents I recall took place at the close of one day's shooting. Our only method of making syncmarks was the old-fashioned handclap. As we left the playroom that day I saw little Yvonne busily playing at "making movies" in her own way.

We had brought the quints five little electric stoves. Yvonne had set hers up in one corner of the room, where we had had our blimped camera. Then she lined

up the four others at the other end of the room, busily giving them direction. She hurried back to her stove "camera," and imitated various actions she had seen me and my operative, Curtis Feters, go through.

And finally she stepped in front of the "camera" and "synked" the scene with a perfect little hand-clap!

American motion pictures were voted the first five places among all foreign pictures shown in Sweden during the past season, according to a report to the Department of Commerce.

The pictures were judged by the committee of Swedish film reviewers at its annual meeting which was recently held in Stockholm. The meeting was held under the auspices of the Swedish Motion Picture Journal. A total of 16 pictures were voted upon by the committee.

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## Name Haythorne Technical Consultant for American

Reed N. Haythorne, A.S.C., in charge of motion pictures, Section of Information, Department of Agriculture, Washington, has been appointed chief technical consultant for the American Films Corporation, with offices in Washington and studios in Alexandria, Va. The president is Edward Alexander, and vice president C. Reese Warde.

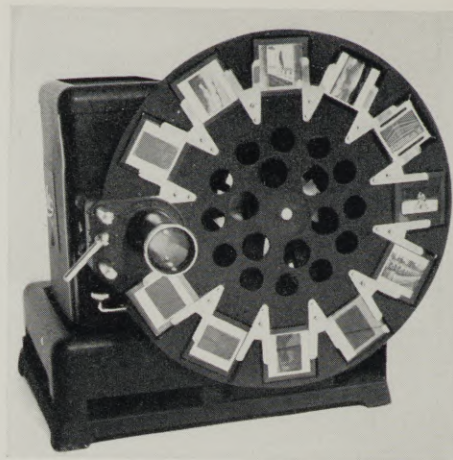
The company is planning to produce a series of historical films for theatrical and non-theatrical release, as well as industrial and educational pictures and to have its studios completed by October 1. It is negotiating with a New York laboratory to take over its personnel and activities.

## Automatically Project 12 Slides in Continuous Run

The new Leitz Automatic Continuous Projector permits twelve slides to be shown over and over again, in consecutive order, for intervals ranging from 10 seconds to a minute. Either standard front projection or rear projection on a translucent screen may be employed.

The projector accommodates the 2 by 2 inch square glass slides, either in black and white or color. In the case of the latter the slide consists of 1 by 1½ inch color transparencies, such as are made with the Leica camera, mounted between two two-inch square glass plates.

The mechanism is switched on after the operator has loaded the twelve slides



*Automatic continuous projector which is a combination of the Leica VIII-S projector and the automatic continuous projector attachment.*

into the slots of the revolving disc. Each slide is shown for 10 seconds, one minute, or any intermediate interval—depending upon the rheostat adjustment. During the change from one slide to another the projection lamp is momentarily switched off by means of an automatic mercury switch, producing a pleasing blend-effect.

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## General Electric Issuing Meter with Single Scale

For those who prefer fewer figures on the scale plate the General Electric exposure meter is now available with a single arc scale. Involving no changes in the meter itself, the new scale provides complete camera settings with the aid of the calculator although it does not interpret exposure data at a glance—as does the full-scale unit. It is felt that this scale, offered as an alternate to the direct-reading unit, will prove valuable to many less-technical users.

The G-E meter, with its easily removable cover, gives accurate readings in bright, medium, and dim light. Its use is the same for movies or stills, in color or in black and white.

Since it becomes a light meter when the hood is removed, the G-E exposure meter is finding interesting new applications. Many photographers are using it in the darkroom for calculating the correct enlarging time. It is also being used to simplify print-making by measuring the transmission factors of negatives.

## Fried Camera Company Now Set with Added Facilities

The Fried Camera Company, 6156 Santa Monica Boulevard, has expanded its shops and production facilities to meet its growing precision laboratory

and photographic equipment requirements. The company covers the fields of color, 35mm. and 16mm. Included in its list of equipment are developing machines, optical printers, light testing machines, registration step printers, continuous printers and special cinema machinery and it takes care of technical service generally.

## English Studios All Set for Industrial Jump

(Continued from Page 319)

where large supplies of older, conventional units created a problem.

On the sets where British-made Technicolor productions are filming the lighting equipment consists entirely of M-R Side Arcs and H.I. Arcs. In fact, save for accents, an American visitor on such a set might easily imagine himself at home.

So great has been the demand for

modern American-style equipment in the British and Continental production centers that our firm has established a British affiliate, Mole-Richardson (England), Ltd. This occupies a factory almost as large as our Hollywood establishment, and is in active production on such equipment as the four sizes of Solarspots, the side arcs, scoops and H.I. arc spotlights.

### Electricity Expensive

The British studios, almost without exception, have one electrical problem unknown in America. This is the question of power supply. Electricity is very expensive in England, and there are often difficulties in securing service from the established utilities. For this reason virtually every studio finds it necessary to generate its own electricity.

Diesel-powered installations are generally used. The power plant at the Denham studio has often been described. The one at the Pinewood studio is sim-

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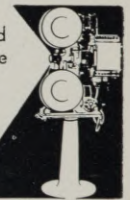
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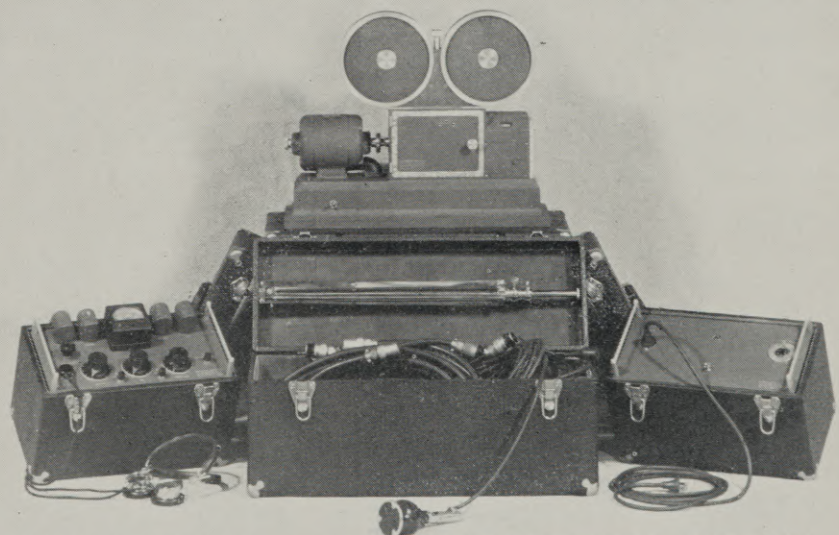


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ilar. It is a multiple-unit Diesel installation and in it, as in the one at Denham, an interesting and practical feature is that the heat absorbed by the water cooling systems of the Diesel units is utilized to aid in heating the studio buildings.

Due to these same difficulties it is virtually impossible for a location unit to tap the public power lines as we do here—even if the location is directly under such a line. Therefore gasoline-powered generator trucks have become very popular. Due to weather and other conditions, however, location work, with or without lights, is not as general as it is in America.

Another thing that would seem strange to Hollywood eyes is to be found in the Gaumont-British studio at Shepherd's Bush. Here the studio—including the stages—is centralized in an eight-story building!

#### Technicians Progress

The laboratory problems of a few years ago seem to be lessening. Due to the pressure of business, I was able to visit only one laboratory. This was Technicolor's excellent new color-processing plant which in addition to caring for European Technicolor production is also busy making European release prints of Hollywood color films. I am informed that many of England's black and white laboratories now are well on a par with those familiar here in Hollywood.

In general, British production has gained much from the example of the many American cinematographers and other technicians who have worked there in recent years. However, the day when an American technician could go to England and be sure of work simply because he was from Hollywood seems definitely past. British technicians have progressed tremendously and are becoming increasingly qualified to stand on their own merits.

American cinematographers and other key artists and technicians are by no means barred from England, though laws and organization agreements naturally seek to protect the British worker. However, the American cinematographer who goes to England today must be unquestionably in the front rank of his profession, and so outstanding as an artist

or technician that his work clearly cannot be duplicated by any British subject available.

In general, it may be said that England has practically everything fundamentally necessary to produce good pictures. Her industry has recently been passing through a depression which equals if it does not surpass the slump our own industry has felt for the last six months. It appears, however, that we here in Hollywood are emerging from our difficulties, and our colleagues across the water are slowly doing the same.

The most encouraging sign is the fact that the most needed element—increased understanding and cooperation between these two production centers—is beginning to make itself felt in a constructive way. As this occurs, only good can result on both sides of the Atlantic.

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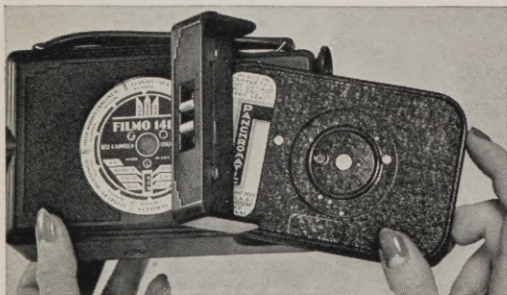
Latest Bell & Howell precision camera scores immediate hit with movie-makers throughout the country. Checking the many new features, camera fans find much to praise.

The new Filmo 141 with features which the beginner from takes well. Yet, it operates versa movi

# NEW FILMO 141



**OPTIONAL ACCESSORIES.** Filmo 141 lens is instantly interchangeable with extra special-purpose lenses. Interchangeable viewfinder objectives are available to match the finder field to seven lens focal lengths. Convenient brown cowhide carrying case which accommodates camera, extra lenses, and extra film magazines is also available.



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## Automatic Is the Word for This Newest Bell & Howell Instant-loading 16 Mm. Magazine Camera

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With Filmo 141, you can change from one type of film to another any time, anywhere, without fogging a single frame! Change film to suit your subject—from color to black-and-white, then back to color, instantly. A dial indicator on the magazine, visible both in and out of the camera, registers the footage of unexposed film.

"Projected-area" Viewfinder, an important new feature, permits no change of field if your eye wanders from the center of the eyepiece. It gives a greater magnification of the image. It sharply defines the edges of the field of view. Extraneous light is excluded, and elements are protected from dirt and damage because this finder is built into the camera.

**Four Operating Speeds**—your choice of two speed ranges—Filmo 141-A offers 8, 16, 24, and 32 frames per second, and Filmo 141-B offers 16, 32, 48, and 64 frames per second—affording a valuable variety of intermediate

speeds in addition to either slow-motion or half speed. Filmo 141-A is equipped with a fine Taylor-Hobson Cooke one-inch F 2.7 lens in universal mount. Filmo 141-B has an ultrafast B & H Lumax one-inch F 1.9 lens in focusing mount, or a Taylor-Hobson F 1.5, if you prefer.

**Single-frame Exposure** device permits interesting animation work of all kinds, and a starting-button lock lets the cameraman get in the picture, too.

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# Eastman Brings Out Super Six-20

## Coupling Photocell with Aperture

**A** NEW amateur camera which automatically adjusts itself according to the light conditions to give a perfect exposure of the scene before it, at snapshot shutter speeds from 1/25 to 1/200 second, is announced from Rochester by Eastman.

In this camera, the Super Kodak Six-20, technicians have accomplished the extraordinary feat of coupling a photo-electric cell with the lens diaphragm. When a picture is taken the lens automatically "stops down" to the exact aperture required for perfect exposure at the selected shutter speed.

Moreover, the same camera incorporates a range finder of radically new design, mechanically coupled to the focusing mount of the lens and combined with the direct eye-level view finder in a single eyepiece. Double exposures are automatically prevented by a device which precludes retriggering of the shutter until the film-winding lever is operated.

An automatic visual warning signal indicates when film should be wound to the next frame. Winding of the film automatically resets the shutter for the next exposure.

The shutter carries slow speeds of 1/10, 1/5, 1/2 and 1 second, as well as snapshot speeds from 1/25 to 1/200 second, and a built-in self-timer device offers a delayed action interval of approximately 12 seconds.

A galvanometer dial on the lens housing permits selective readings of light and shadow areas in a scene, as with a photo-cell exposure meter, and for special effects the lens diaphragm may be adjusted by hand.

The radical technical advances incorporated into the Super Kodak are combined with unique design which sets a new standard of functional beauty. Smoothly contoured, admirably balanced, simple in appearance, it combines the demands made by its mechanism with careful provision for ease and convenience of operation.

The body, back and range-view-finder housing are die-cast of special aluminum alloy for maximum strength plus lightness. Beaded borders, finished in polished chromium, contrast well with the larger satin finished metal areas. The body covering is fine quality black morocco grain leather, and lugs for hand or neck straps are provided.

### Rigid Lens and Shutter

Slight pressure on the bellows release allows the user to draw the camera front forward until it locks in picture taking position. Front extension struts of new design support the lens and shutter assembly with girderlike rigidity.

Held in picture taking position, it fits the left hand comfortably, leaving the thumb and index finger free for focusing. The index finger of the right hand rests on the shutter release, built to slide toward the user with a smooth, triggerlike action.

### Technically Correct

When the camera is held for a vertical picture the range-finder is at the top. Just below it is a multiple collective lens, with the sensitive photocell behind it. This multiple lens is so calculated that it covers the exact field of the camera lens—an important feature, in that it causes the photocell to react only to the light conditions in the picture scene.

At the moment the shutter is released the photo-cell actuates the galvanometer in the lens housing and the diaphragm adjusts to the correct aperture at the chosen shutter speed to produce a technically correct negative.

The shutter speed scale is seen through a window on top of the hood which projects over the bellows and lens. Adjustment is made by turning a knurled knob at the left of this hood. When the shutter is tripped a red warning dot appears in this window to indicate that film should be wound.

Design of the range-finder is unique. In the square field of the view finder appears the range-finder's triangular split field. The triangle is as brilliant as the remainder of the view.

A lever on the back of the camera controls the film winding. This lever folds down into the camera body out of the way and locks. Its first upward stroke resets the shutter and uncovers the film number window. A few subsequent strokes advance the film into position for the next picture.

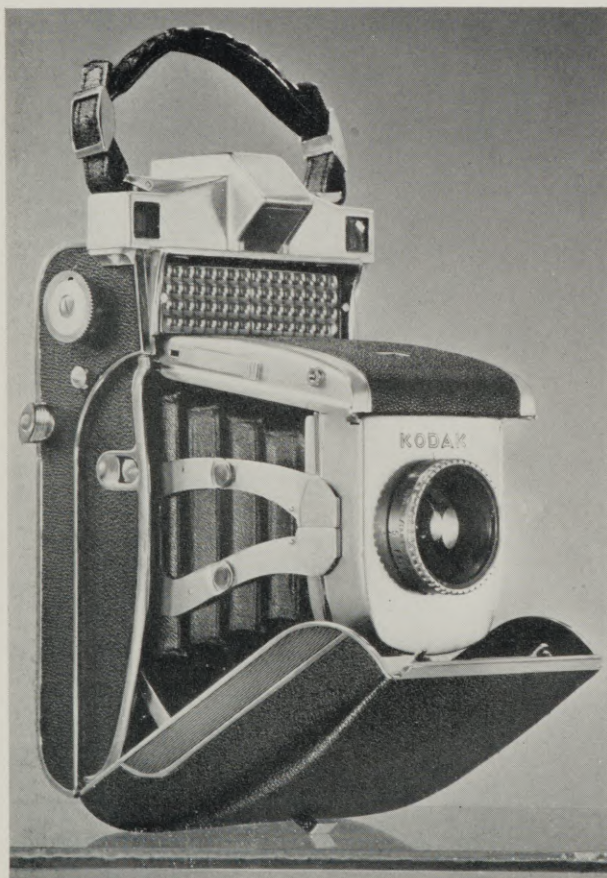
### Eight Pictures

Despite all these operating conveniences and technical safeguards, the camera is not bulky. It is approximately the same size as a conventional Six-20 Kodak. It takes eight pictures, 2¼x3¼ inches, on a roll of Six-20 film, and its lens is a newly calculated Kodak Anastigmat Special f.3.5, closing down to f.22.

Made for the photographer who would rather be sure of perfect pictures than guess at exposures, the instrument is a logical extension of George Eastman's idea that a camera should be made as easy to use as a lead pencil. The user focuses and shoots.

If he changes his shutter speed for a later picture, the coupled photo-cell and diaphragm galvanometer automatically compensate with a larger or smaller lens opening. Changes of light on an intermittently cloudy day shifts from a brilliantly lighted scene to a shady spot, the need of quick change from a slow to a rapid shutter speed—all these variations are instantly equalized. Yet, if the user wishes to underexpose for a certain pictorial effect, or use a large lens opening to focus out an obtrusive background, he can push a single lever and convert the camera into a conventional focusing type. Retraction of the same lever returns it to its "Super" status.

Retail price of the Super Kodak Six-20 is \$225. It is expected to reach dealers in August.



*The new Super-Kodak Six-20*



# Hollywood Motion Picture Forum Holds Successful Fourth Meeting

In Eight Sessions Across Two Days Visual Educationists  
Look Upon Nearly Twoscore Subjects Majority of Which  
Fall in Their Field—Increased Photographic Skill  
Among Amateurs Reflected in Advancing Quality  
of Product Designed for School Use—Dinner  
Speakers of Influence Promise All Aid  
Possible in Helping Educationists

**T**HE Fourth Annual Educational Conference of the Hollywood Motion Picture Forum was the most successful of the series in attendance and interest. It was held July 15 and 16. Excepting the luncheons, four sessions were held Friday and four sessions Saturday.

Friday the morning session was at the Melrose School. The 2 o'clock session was at the Auditorium of the R. C. A. Manufacturing Company, the 4 o'clock at the Bell and Howell Auditorium, and the 7:30 showing at the Melrose School.

On Saturday the forenoon and early afternoon sessions were at Melrose, the 4 o'clock at the Bell and Howell Auditorium, and the informal dinner in the evening at the Victor Hugo Restaurant in Beverly Hills.

That was a full program. Under the experienced direction of Walter Evans, secretary of the forum, the program moved by the clock. Each session started on time and so finished.

## Speeches Few—but "Great."

Without minimizing the interest attaching to any of the sessions it may be said the dinner Saturday evening topped the steady array of features that had been set up for the entertainment and instruction of the guests.

Speeches intentionally were held at a minimum, but the restriction in no manner interfered with the volume of quality—or with the brimming enjoyment of the quips bandied between President Bruce Findlay, toastmaster; Congressman Jerry Voorhis of Los Angeles, who during the day had been with President Roosevelt's party in its parade in Los Angeles and its run over the road to San Diego; Dr. Vierling Kersey, superintendent of Los Angeles schools, and John Anson Ford, supervisor of Los Angeles County, also a member of the presidential party to San Diego.

Here was a quartet that meant much to the cause of visual education, which after all is the foundation on which the Motion Picture Forum is based. It was

## By GEORGE BLAISDELL

the civic side as represented by the toastmaster, the national, the side of the schools, and the legislative.

If there were an abundance of fun following the ribbing of and by the principal speakers, there also was more than an equal share of tense attention to all of the four in those minutes when they talked of the importance of visual education to state and nation and to the world at large. Each pledged himself to do his best to further its interest.

The hundred and fifty to whom the speakers talked were representative of all walks—of the educational principally, from teachers to principals and school officials; of business, of exploration and of citizens of influence.

Among the walks represented was that of the Church in the person of Abbe Charles Meeus, of the Catholic Mission in Haimen, China, who had just returned from there bringing with him several hundred feet of film showing rescue work around the mission as a result of the shocking human destruction in China, among others of Boy Scouts saving children and of the work of rehabilitation.

## Judson Picture Rare.

In the nearly twoscore pictures shown during the eight sessions of the conference there were many that stood out among the class of unusual. It hardly will be fair to mention these, as this writer was not among those who saw all of them.

He did, however, see "Design of an Ideal," in Kodachrome and synchronized, photographed by Frank Judson of the Art Center School. This is a remarkable picture, in conception, most certainly—in preparation—and likewise in execution. The photography, too, was of unusual quality, and then, to make that seem more notable, it was projected on the new Bell and Howell 16mm. 1200 watt projector.

The editor makes a pledge to the readers of this magazine that if it be in his power and he be not stopped by Frank Judson he is going to tell them quite some more about this unusual film, which in brief is the story of the planning and building of a miniature civic center.

One of the big sessions was that at the R. C. A. Auditorium, at which A. C. Lindquist, representing the R. C. A. engineering staff, discussed and demonstrated the advance in studio research and technique in recording sound. He went back into what seems now the archaic period, back to 1902 if we recall, where the phonograph did not possess so great a spread as measured in piano octaves.

There were some remarkable present day examples, however, to offset the records and phonographs of more than thirty years ago. To the layman it is interesting to note the subjects selected by the sound engineers when demonstrating their conception of the last word in sound recording. It is quite certain the layman is going to remark "That surely suits me."

## See Notes, Hear Music.

Among these subjects perhaps the most interesting were the screened showing of the sound track on running film simultaneously with the audible recording of "The Sorcerer's Apprentice." Leopold Stokowsky and the Philadelphia Orchestra were creating the music and Stokowsky also was doing the mixing on the rerecording. But that's another story.

The visible record was shown twenty frames in advance of the music, but as this writer was seated in the rear of the hall much of this must have been compensated to his ears. In the more frenzied passages of the audible music it was plainly to be seen the visible recordings were equally as excited. It was a rare treat.

Other subjects were the music for "The Dance Macabre," conducted by

(Continued on Page 351)

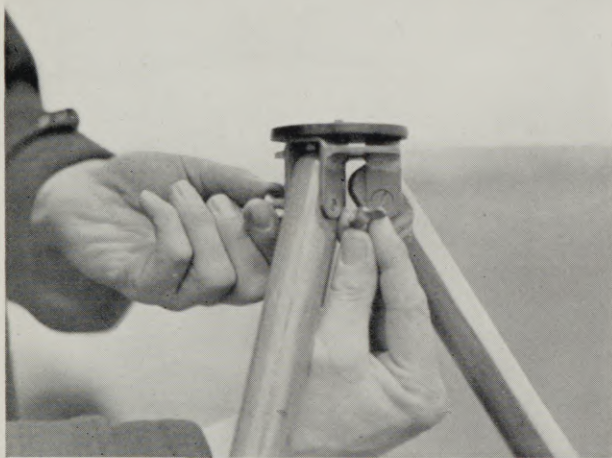




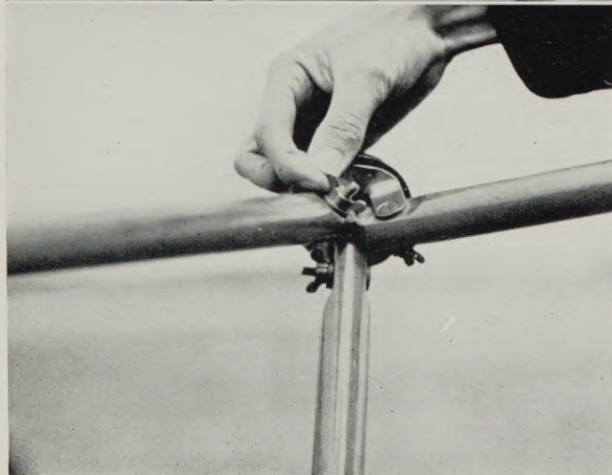
*Optipod mounted on tripod permits movie panorams or tilt for minicams when taking vertical pictures.*



*This beanpole tripod was built at practically no cost with three 4½-foot legs, a bakelite disc, a strip of brass and several bolts with thumbscrews.*



*Each tripod leg is bolted to an inverted U-shaped support. Adjustment is made by means of thumb-screw shown. Note lugs soldered between U-supports to give further rigidity.*



*Underside of tripod showing the flattened tops of tripod legs. Only brass stripping and brass nuts and bolts are used to prevent rust.*

## *Here's a Bangup Homemade Bangaround Beanpole Tripod For Car or Canoe*

**I**F YOU ever graduate into the class of tripod-luggers, here's an inexpensive, easily built, "beanpole" tripod that'll take an awful lot of banging around.

All you need to start with are three broom handles or similar wooden legs, 4 or 4½ feet long and about 1 inch in diameter. Drive nails in the bottom of each leg, snip off the heads, file blunt, then wrap a short length of wire just above each metal "toe" to prevent possible splitting of the wood.

Next, cut a 3-inch circle of bakelite, ¼ inch thick, and drill four holes—one in the center for the tripod screw, and the three others equally spaced around the edge to take bolts for the tripod leg supports.

Each of the three leg supports is bent into an inverted "U" from a 4-inch strip of ¾-inch brass, ⅛-inch thick. The bend in the U is 1 inch wide, while the sides extend down 1½ inches. Each tripod leg is fastened to a U-support with 1½-inch bolts, tightened with thumb screws. Thumb screws are ideal, for they permit the legs to be moved freely in any position. Once tightened, it is impossible for the legs to slip even on highly polished surfaces.

The brass leg supports are bolted permanently in the base of the tripod head, with bolt heads countersunk. Small 1¼-inch brass strips are soldered between each U-support to provide greater rigidity.

The camera may be mounted atop the head, or an auxiliary optipod may be employed to permit minicams, for instance, to be tilted for either horizontal or vertical pictures, or movie cameras to follow moving objects by means of panoraming.

While tripods of varying height may be constructed by merely altering leg length, it will be found that the 4½-foot height is ideal for general shooting. This size will fit any car or pack away besides the gunwales of any canoe. Unlike the more expensive tripods, the varnished legs of the homemade tripod may be set down in lake or river for filming fish action without fear of ruining equipment.



# *Make-up as Aid to Amateurs Is Described by Veteran Specialist*

By MAX FACTOR

**A**LMOST every amateur moviemaker can look back to the days when he was a novice in cinematography and remember things—commonplace now—which once seemed to offer enormous difficulty. Interior lighting—the use of filters—even correct exposure seemed a problem until it was learned that they could be mastered by understanding a few simple principles.

Today, an increasing number of amateur moviemakers are adding make-up to this list of mountains that turned out to be mole-hills. For make-up is a problem only to those who do not understand the few basic rules for its application.

The starting point for any discussion of make-up should be a clear understanding of why it is used. Disregarding "character" make-up which, though extremely interesting, is quite as much a special purpose artifice as is, for instance, double exposure, make-up is ordinarily employed simply as a means of making subjects photograph more attractively—and more naturally—than they would otherwise.

It has often been compared to the retouching of a still photographer's portrait negatives, for both cover up blemishes in facial skin textures and coloring.

Like retouching, make-up, if applied crudely or excessively, can do more harm than good. So the first rule of make-up must be to apply it as lightly and delicately as possible.

A make-up that makes the actor feel as if he was wearing a mask is a bad one; not only will it have a bad psychological effect upon the actor, but it will photograph badly. A make-up should be only barely heavy enough to cover the face; the actor should be almost unconscious of its presence.

## **Contrast to Coloring**

For the same reason a make-up should be smooth. It should present an even overall texture and blend smoothly into the hair-line, neck, throat and other areas which are not made up, so that on the screen the actor does not appear to be made up.

Since make-up paints a concealing covering over blemishes in facial texture, including some which express themselves in color, logically we may expect to be able to use make-up to control the photographic rendition of facial coloring as well.

Not only can we do this, but we can, by controlling the tone of the make-up,

produce a photographic result which enhances the black and white rendition of the player's natural coloring.

Your last summer's vacation pictures probably hold the key to how and why this is done. Do you remember how unexpectedly blond those sun-tanned blonds appeared in your films? The darker tone of their tanned faces simply provided a tonal contrast which enhanced the lighter shades of their hair.

Thus, if we are photographing a blond, we can make her seem more blond and more attractive by making her up in a relatively dark tone. Similarly, if we are photographing a brunette, we can achieve a parallel result by using a light-toned make-up which again gives a definite contrast to the dark-toned hair.

## **Applying Make-Up**

Make-up must be applied carefully, but this does not mean it is necessarily a time-consuming or a difficult process. And just as important as care is the matter of going through the various steps of making up in their correct order. Applying an eye-shadow after powdering, for instance, is as illogical as putting a negative in the hypo before it has been developed.

The start of a good make-up is a clean face. If a woman's, it must be free from traces of street make-up. If a man's it must be smoothly shaven.

The first actual operation in applying a make-up is the application of the foundation color. This gives the face the desired tone, and as the name indicates, supplies the foundation of the smooth texture desired for the finished make-up.

To apply the foundation, squeeze about one-quarter of an inch of the material from its tube into the palm of the hand. Then with the fingertips of the other hand, thin it out, and apply it in little dots all over the surface of the face. Next, still with the fingertips, blend these dots together, working from the center of the face outward, to form a smooth—and very thin—coating all over the face.

Finally, remember that in modern make-up almost every operation should be done with a patting motion rather than a smearing or rubbing one; this eliminates streaks and blotches.

Shadowing the eyelids is done similarly. A very thin film of color is applied to the eyelids, again using the fingertips and with a light outward motion. The coloring should be blended carefully upward and outward toward

the eyebrows and the outer edges of the lids. No decided line should be visible.

## **Eyes and Eyebrows**

The eyes are accentuated by the use of a special eyebrow pencil. This is done by drawing a fine line on both the upper and lower eyelids just where the lashes meet the eyelids. Draw this line from the inside of the eye outward, and extend it the tiniest fraction of an inch beyond the outer edge of the eye. This line must not be too sharp or too well defined, but blended or softened so that it suggests rather than reveals an actual line.

The eyebrow is one of the most important indicators of both expression and character. It should therefore be made up with great care. Carelessly made-up eyebrows can change the entire appearance of any actor, making him look bad tempered, perpetually surprised, or haughty without any intention of so doing.

In making up eyebrows, the best pattern to follow is that provided by nature, following the natural form and arch of the actual eyebrow. In general, a man's eyebrows should be less arched than a woman's.

Eyebrows are of course made up with the same eyebrow pencil used for lining the eyes. Draw fine hair lines in the shape and in the direction in which the hair naturally grows. Begin the eyebrow line above the inside corner of the eyelid, and give it an arch that is approximately parallel with the eyelid.

This outer corner of the brow should not droop downward nor curve upward. Also, in making up women, avoid the thin line of a finely-plucked eyebrow if you want to retain character.

## **Lip Make-Up**

Making up lips for photography is in many ways quite different from applying conventional street lipstick. Lip rouge is, of course, a moist rouge rather than the conventional stick form, and is applied with a small camel's hair lip-brush. The lips must be clean and dry before starting.

In general, the natural outline of the lips should be followed, taking pains to extend the rouge well to the inside of the lips so that no "make-up" is visible when the mouth is open as in smiling or talking. The traditional "Cupid's bow" lip outline should be particularly avoided in making up men.

(Continued on Page 351)



# Gadgeteers Stage Regular Parade of Handiwork at Los Angeles 8mm.

THE July meeting of the Los Angeles 8mm. Club was highlighted by an exhibition of home-built contrivances that probably caused several sleepless nights for members not in the gadgeteering stage. The inventiveness of the contributors brought to the gathering an array of expedients that took its undivided attention and stimulated the imaginations of all potential gadgeteers present who failed to provide to the entertainment and gave them much food for attempts to outgadget their associates in the future.

First prize was awarded to A. B. Callow for many novel and finely made devices. George T. Hewitt was winner of the second prize, and G. Loren Foote was given honorable mention.

Several of the home products were constructed to replace more expensive equipment now on the market while a portion consisted of contraptions that were conceived by the originators who were unable to purchase counterparts.

Many and varied were the personal creations, ranging from rewinds converted from egg beaters to a home reversal film processor that only lacked sound effects to reach the ultimate in perfection. The purpose of each achievement was demonstrated by the builder during the course of the program.

An assortment of rewinds mostly constructed from merchandise manufactured for other purposes were much in evidence.

Egg beaters, emory wheel standards and plain wood uprights with handles and spindles vied with each other in adaptability that might serve as an inducement for the 5 and 10 cent stores to include low priced movie accessories in stock.

## Projector Container

A contribution of merit is a case constructed so as to permit the projection of moving pictures without the necessity of removing the projector therefrom. The front and back of the container unlatched for quick removal bringing to view a number of film reels held in place on the inner surfaces by means of short spindles, thus utilizing to good advantage all extra space.

The projector is secured to the base of the remaining frame, which has sufficient room to permit loaded and take-up reels to be snapped into position for operating. A small aperture cut into the wall immediately ahead of the lens permitted pictures to be flashed on the screen as usual.

The next attraction was a unipod of unique design intended for table top photography or for shooting from the

By ROBERT W. TEOREY

floor. An L shaped piece of strap metal served as the tilting unit. This was fastened by the short end to the camera base by means of a thumbscrew, while the long end was in a vertical position at the side of the camera, which was a Keystone.

A hole drilled in this section near the camera center permitted a standard of the same material to be secured to it by means of a wing nut and short bolt. The lower end of the standard was bolted to a circular base of heavy metal.

By loosening the wing nut, the camera could be tilted to any angle including the up-side-down so necessary when filming reversed action shots. A bright plating set off a very fine job of machine work.

## Ingenious Viewer

Fertile minds provided film reviewers of inexpensive materials and one particularly original viewer employed a flashlight bulb and battery to illuminate the film, while an ordinary magnifying glass of small diameter served to enlarge the frames for easy identification.

The light bulb was situated in a small wooden inclosure to the left of the splicer and in line with the rewinds. The battery was secured to the rear on the editing base. The viewing glass was contained in a hard rubber housing, which was hinged to the light container and could be tilted to the rear to permit the insertion of film over the source of illumination. When brought forward into position for viewing it automatically switched on the current.

Light control switches built on a Bell and Howell projector pointed to a method of operating the motor independent of the projection lamp during rewinding after projecting pictures, thus saving on the life of the costly lamp.

Three toggle switches were vertically inset in the projector base. The upper controlled the lamp, which could be turned on only when the motor and fan were in operation. The lower operated the motor, while the center one was to be used on a pilot lamp to be added later.

## Reversal Developer

A noteworthy contribution for fans interested in processing their own film was a home reversal developer with its own motive power. A large metal drum having a spiral of wire wound about it with a spacing of slightly more than 16mm. served to hold the film for process-

ing. A shaft running through the axis of the cylinder held it in place on two standards of a wooden frame.

A large wood pulley attached to one end of the shaft was connected by a belt to a tiny electric motor, which slowly revolved the unit giving the operator freedom to follow other pursuits while the film developed. A shallow metal pan under the drum held the chemical solution.

Title-conscious members derived much enlightenment from examining a titler made from several pieces of scrap lumber that made possible the filming of a number of title sizes through the use of supplementary lenses of various focal lengths and a movable easel. A short length of wood served as the base with a short strip fastened to one end to align the camera.

A wooden standard with lens aperture and vertical grooves for substitution of diopter lenses procured from spectacles were secured to the base in front of the moviemaker. A square of wood was used as the easel. This had two short strips of wood fixed to the lower edge and spaced to the width of the base board which allowed the upright to be set at any distance from the camera without becoming out of line.

A clever contrivance for filming small objects at variable close ranges was demonstrated by another creative member. Several auxiliary lenses and a sliding easel made this possible. A short length of metal tubing with a fixed seat at one end for the camera allowed a metal rod to be inserted into the other end and secured by a set screw.

An oblong metal easel attached at the exposed end of the rod could be slid out to the exact distance required by the supplementary lens to be used. Objects centered within the plane of the framing easel were then in focus.

## Callow Top Winner

Of course gadget night at the club had the stimulating attraction of a prize offer to the owner of the best attempt submitted and the originator of a varied assortment of contributions, A. B. Callow, walked off with the donation safely tucked in his pocket.

A great deal of overtime "gadgeteering" had evidently been undertaken by this member and the workmanship shown in the construction of his gadgets had all the earmarks of a well-appointed cine workshop.

The first presentation of this builder was a tripod and tilthead constructed in the conventional manner with exception

(Continued on Page 349)



# Visual Educator Must Keep Pace with Rapid Advance of Projector

By H. W. REMERSCHIED

Western Manager of Bell and Howell

*From Paper and Demonstration before Hollywood Motion Picture Forum*

**D**URING the past few years there has been a decided increase in the use of motion pictures for educational purposes, and the trend in this direction has been so rapid that some of us may have lost sight of the tremendous advances that have been made by the manufacturers of projectors to keep pace with the ever-increasing requirements.

I shall refer only to projection, because the projector is the visual educator's major working tool, and upon its successful operation is dependent the failure or success of the subject matter being projected.

It is therefore somewhat essential that the visual education teacher know something about the refinements the projectors have undergone within the last few years.

To furnish you with some idea of the development in projectors, I should first like to project on the screen the light emanating from a 200-watt 50-volt lamp which was the first type of lamp used in the 16mm. projectors, and which were in use during 1922 to 1928.

## 250, Then 375 Follow

This lamp was followed by a 250-watt 50-volt lamp, which was placed on the market in March, 1928, and also a 375-watt lamp which came into prominence in 1931. We shall not take the time to demonstrate the brilliance of these two lamps because they acted only as stepping-stones to the more popular 400-watt 100-volt lamp, which came into prominence in December of 1931.

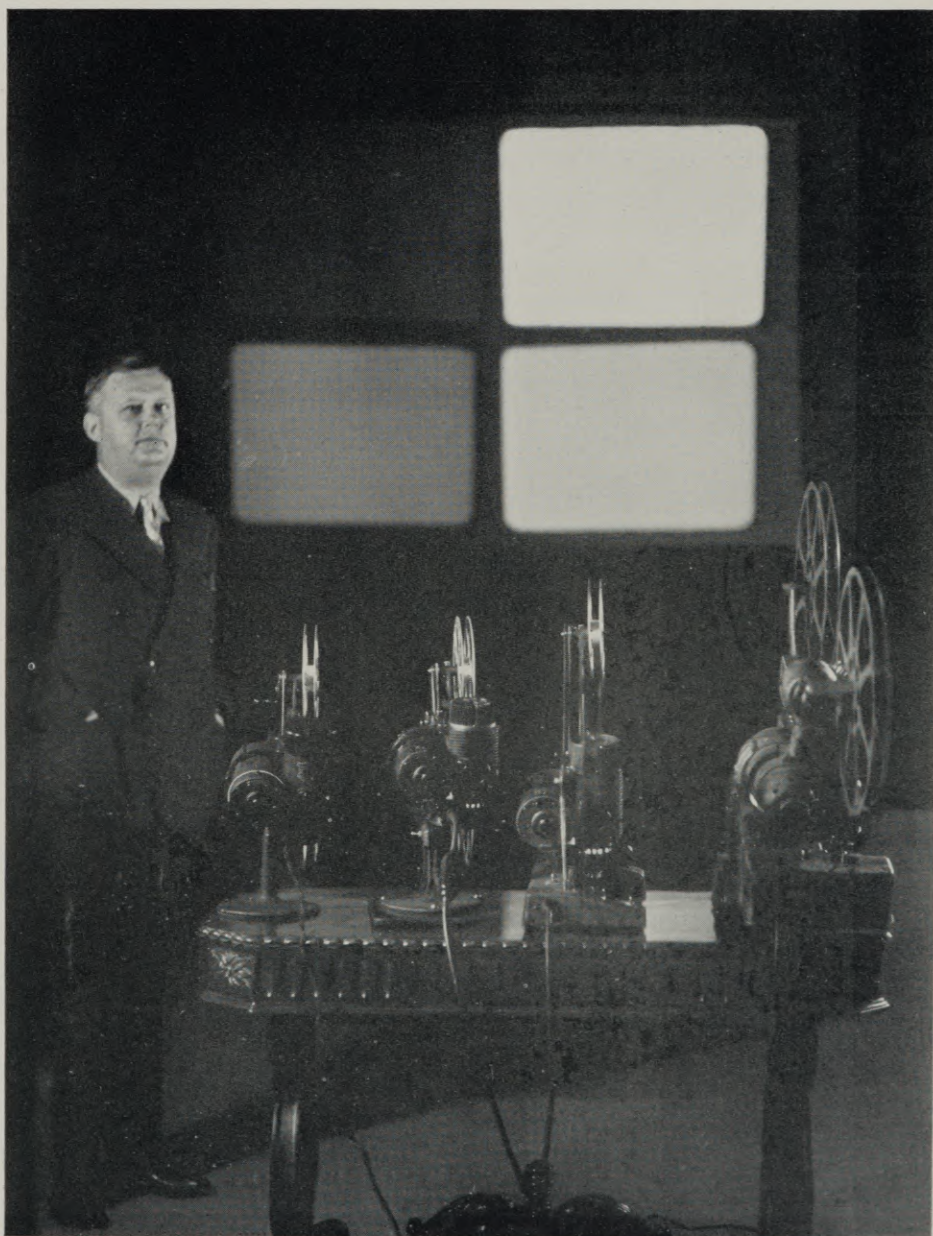
I have not taken a foot candle reading, which would acquaint you with the exact comparison between the 200-watt and the 400-watt, but it is obvious that the difference is, as it should be, approximately 100 per cent.

Following the 400-watt lamp came the

500-watt, which was developed in 1933. I might mention that the development of this particular lamp was considered a major achievement, and it was the opinion at that time that the 500-watt lamp was the ultimate because we were now experiencing a heat condition which had already necessitated the redesigning of the cooling mechanism in the projectors.

While the 500-watt lamp was considered the ultimate, it was only a matter of another year, or until 1934, before the 750-watt lamp was developed. I should now like to make a comparison between the 400-watt and the 750-watt, as by so doing, we again double the screen brilliance over the original 200-

*(Continued on Page 350)*



Four Bell & Howell projectors left to right, models of 1928, 1932, 1935, 1938. Comparative screen illumination of the four: Upper left, scarcely discernible, 50v. 200 watt 1928; lower left, 110v. 400 watts 1932; lower right, 100v. 750 watt 1935, upper right, 100v. 1200 watt 1938.

H. W. Remerschied at left.



# Nothing Mysterious About Filters but Don't Use Too Many at First

By EARL THEISEN

Picture Editor Look Magazine

**T**O THE average photographer the use of filters is either avoided, or at best approached in the light of an experiment. There is really nothing mysterious or difficult about them, and surprisingly pleasing results may be obtained with one or two simple filters at first.

Too many aspiring photographers have been frightened by the complicated and intricate text book explanations. It is granted that the physics of light and filtering of light in the photographic process is not easily understood, but such prior knowledge may be considered as useless as that of knowing the mechanics of an auto before learning to drive it.

## Movie as Well as Still

Using filters when filming close-ups opens a new field for the amateur. The tonal rendition and "feel" of the close-up may be widely varied, according to the results desired.

Some persons have skins that photograph chalky white, while others go too dark. Much may be done to correct this, or, in filming sub-normal productions, deliberately to distort by making the "heavy" seem more swarthy and villainous through the aid of a filter.

## No Hard and Fast Rule

The choice of filters depends on the effect desired, and no hard and fast rule can be given when using them. Only one thing is to be watched. Filters

require an increase in exposure because they "take out" some of the light passing through them.

This exposure increase is known as the "factor" and means nothing more than the amount of additional light required to make a good exposure. A "factor" of 2 means that one more stop exposure is required to get a normal exposure, while a factor of 4 means two stops more are required, a factor of 5 requiring two and a half stops, etc.

## One of Two Things

Filters always do one of two things: they make the subject photograph either lighter or darker, depending on the subject's color. Using a green filter will make everything that is its own shade of green photograph lighter, while reds and most other colors go darker.

This is true of all filters. Generally speaking, all filters make their own colors photograph lighter, while other colors that are absent or minus in the filter go darker. A red filter will cause reds to seem whiter, while greens and blues will photo dark.

Hence, a red filter will hold back, or absorb, as it is known, the blue in the sky and make it go dark with more detail in white clouds, while at the same time making the reds photograph a lighter tone.

Using a green filter for a close up will make the red lips seem darker and the contours and modeling of the face

deeper and more pronounced with a good skin tone, although the freckles will have a tendency to show up. The general effect is that gained by portrait studios using ortho film without a filter.

## Lips Photograph Light

The high speed super-sensitive pans which have a high red sensitiveness without filters make the lips photograph



Figure 1



Figure 2



Figure 3

quite light and there is a general loss in delicate skin tone. A green filter materially remedies this, although personal preference may consider this filter too harsh with this film. If so, a G will do much to improve the face modeling, not changing materially the lip reproduction, although the skin texture will have a tendency to be lighter.

On the other hand it may be desirable to have the close-up face seem lighter, particularly if the person being photographed has a heavy tan or bad skin blemishes. A 23A or red filter or its equivalent will give a very white face with light lips. If this filter is used it would be advisable to add a bit of color to the lips, such as blue or brown eye shadow applied instead of the ordinary red lipstick.

A purplish or brownish red lipstick will help some to prevent the lips from photographing too light. On the whole a red filter will only be used with caution, since it makes the eyes photo too dark and the face seems washed out,





Figure 4

giving something of a "lily-white" appearance.

A purple or lavender filter combines the effects of the red and blue mentioned. This filter affects both the red and blue. For the red, the filter has a tendency to lighten lip coloration. From the blue a darker reproduction of skin tones follows.

#### Contrast Filters

While the general tendency of the foregoing filters, known as contrast filters, is to distort, that of such filters as the yellow or X filters is to compensate and to give a correct monochrome reproduction.

These filters have little effect when



Figure 5

filming close-ups, being of more use in giving a nice balance in tone values rather than accentuating certain colors in relation to others.

The tendency of the contrast filters is to throw the photographic balance off in the favor of the filter being used by making the photographic emulsion blind to other colors except for the particular filter being used.

Sunlight differs from Mazda illumination, the artificial illumination having more yellow light in comparison to sunlight. The Mazda light may thus be considered as having a light-yellow filter effect.

When using either a light yellow,

darker yellow or orange filter the effect is progressively changed. While light yellow filter has little effect, each increase in filter color from the yellow toward the red makes the skin tone reproduce lighter.

#### Highlight and Shadow

When using a deep yellow or red filter on a bright sunshiny day the shadows will seem to reproduce darker. The shadows are illuminated from the blue of the sky by reflection, and the filter will absorb this blue shadow light to make the difference between the highlight and shadow of greater contrast.

On a color blind emulsion such as was used in the early days, freckles, blemishes and skin tone reproduced exaggerated. Today the same effect, such as is seen in passport photos, could be obtained with a blue filter.

It must be remembered that filters take something out of the light being used, thus necessitating an increase in exposure. Underexposure with a filter tends to increase the effect of the filter, or to give the same results as if a darker filter were used with the correct exposure.

Overexposure with a filter flattens the final picture and makes the image seem like a lighter colored filter were used.

Always use a deep sunshade when employing a filter to guard against lightflare or haze. Filters must be kept dry and given the same cleaning and care given a lens.

Experts advise that the beginner do not try to master too many filters at first. Begin with a yellow, red and green, finding out what they will do. Become accustomed to them just like a new auto.

## Los Angeles 8 mm. Club Has Crowded July Meeting

The July meeting of the Los Angeles 8mm Club, held on the 12th, was strongly attended. John Walter spoke for the incorporation committee and advised that a further report would be made at the August meeting. The social committee reported that plans were under way for our annual picnic to be held at Mineral Wells in Griffith Park.

Prizes were then awarded to the winners of the semi-annual contest and they were as follows:

A. B. Callow, first prize, consisting of a film humidifier for his picture "Needed, a Social Secretary."

Robert Teorey, second prize, consisting of geared rewinds mounted on editing board, for his picture "Golf Widow."

Bion B. Vogel, third prize, consisting of a Reynolds fading glass for his picture "Rise and Fall of Mary Margaret."

Mr. Flette, representing Robert M. Lynn, distributor of motion picture equipment, introduced to the club the

8mm Ditmar Camera and gave us a very capable explanation of its fine features.

President C. G. Cornell then appointed a committee consisting of Dr. Moore, president of the Orange County 8mm Club; Mr. Converse of the El Segundo Cinema Club; and our own member, George Blaisdell, to determine the best gadgets shown at the meeting.

In the order in which they were presented gadgets were shown and their workings explained by members Pyle, Vogel, Teorey, Hewitt, Walter, Foote, Cunningham, Moore, Callow, Niersbach, Hague and Engles. The committee awarded first prize of one year's subscription to the American Cinematographer, given by that periodical, to Mr. Callow for his many novel and beautifully made gadgets. Second prize, one Reynolds fading glass, went to George T. Hewitt, and honorable mention to G. Loren Foote. The novel and interesting

gadgets displayed exceeded even the expectations of the officers, who visualized the gadget meeting as interesting but not professional.

Our good friend Bill Stull next introduced Bob King, ex-president of the Columbia Cubs, and Miss Dorothy Conrad, the incumbent president. They projected and told the history of their 35mm picture "Lucky Piece," which was most interesting. Hearing from Mr. King the history of this production from its conception was most educational to our members.

We were then treated to a showing of the winner of the Orange County 8mm Club annual contest, a black and white picture titled "The Temptress," and were able to congratulate its youthful maker, Harold Witt, who was a guest at our meeting.

Miss Conrad, Mr. King and Harry Babb were then appointed as a committee to judge the winner of the pictures taken at the outing in Hidden Valley and Mr. Armstrong was awarded the decision over Mr. Hague in a race which could easily have been a tie, so fine were both of these pictures. The prize was another fading glass.

BION B. VOGEL, Secretary



# Bell & Howell Introduces Unique 16mm. Magazine Loading Camera

**I**NCORPORATING unusual features for amateur moviemakers, the new Filmo 141, a 16mm. magazine loading camera of unique design, made its bow to the market July 1.

Features not usually found in cameras of this type include the radically new "projected area" viewfinder, four camera speeds and a single frame exposure device opening up the interesting field of animation work.

Operation is exceptionally simple. The beginner has but to slip the ready-loaded film magazine into the camera, close the door, and he is ready to shoot black and white or color film. The advanced amateur will make use of the various speeds, single frame exposures, interchangeable lenses, critical focuser, etc., for the more versatile effects he has learned to achieve.

## New Type Viewfinder

The more radical departure from previous design is the "projected area" viewfinder, a positive type of viewer aimed to bring to the amateur moviemaker the same ease and accuracy in determining his field that the Hollywood cameraman has long used on professional cameras.

Briefly, the advantages of the new viewfinder are these: When using the conventional or negative type of viewer, the operator inadvertently will shift his eye a little, to one side of the eyepiece

or the other, or up or down, and as he does so, the field he is centering will change its limits according to the motion of the eye. Not so with the "projected area" viewfinder, for the field area image is immobile, no matter what the angle at which the eye looks into the eyepiece.

When lenses of different focal lengths are to be used on the camera, the front element of the viewfinder is easily and quickly removed and replaced by the proper element, and herein lies a feature which will be important to many: The "projected area" viewfinder is always entirely filled by the image, regardless of the focal length of the lens in use.

There are no masks to cut down the size of the image. Further, the eyepiece of the viewfinder is set in a soft rubber cup, which prevents side glare and which also renders the camera easy to use by persons wearing glasses. The viewfinder, as on other Filmo cameras, is fully inclosed within the camera housing.

## Uses Eastman Magazines

The Filmo 141 takes Eastman film magazines, each of which is provided with its own individual footage indicator, the dial being plainly visible through a window in the camera. The magazine is slipped into the camera through a small door at the rear, and as an added safeguard the mechanism will not work until the door is properly closed.

As the magazine is withdrawn, its

aperture is covered automatically, preventing fogged film. The position of the camera door at the rear permits magazines to be changed, and the soon-to-be announced critical focuser to be used without removing the camera from a tripod. The Model 141 uses the regular panchromatic film, super-sensitive pan, and Kodachrome film for natural color.

## Cooke Lens Equipped

A color-corrected 1-inch F2.7 Cooke lens is standard equipment on the new camera and since it has the same lens mount as the Filmo 70, all lenses used on the latter cameras are interchangeable. The wide selection of lenses available includes focal lengths from 15mm. to 6 inches, with "projected area" viewfinders provided for each.

The mechanism is controlled by a governor which, Bell & Howell claims, maintains a constant rate of film movement, thus insuring even exposure throughout the entire film run. The shutter is of the rotary type, giving uniform exposure over the entire frame area, and its open segment of 133 degrees gives an exposure of 1/43d second at 16 frames a second.

The new Filmo will be available in two models, differing only in the operating speeds. The 141-A will have speeds of 8, 16, 24 and 32 frames per second, while the 141-B operates at 16, 32, 48 and 64 f.p.s.

The camera is 1-15/16 by 3 5/8 by 5 5/8 inches and weighs 39 1/2 ounces, a pocket-full for the overcoat.

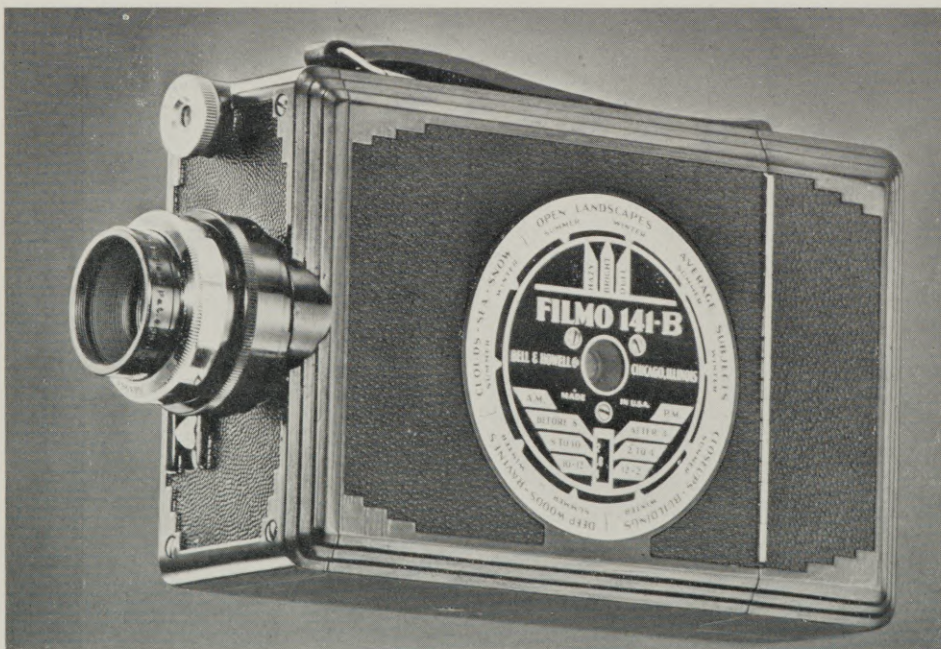
## San Francisco Cinema

The Cinema Club of San Francisco changed its place of assembly to the auditorium of Kohler and Chase at 26 O'Farrell street, its first meeting being held July 19.

Jack Mullin headed the program with "Music with Your Movies." The speaker has devoted much time and effort to collecting recordings and adapting them to films he has made. He gave an interesting outline, based on his own experience, on how to approach the problem of synchronizing film and music.

The "member film of the month" was accorded to the picture photographed by the late Harry Miller of Burlingame, who passed away in Mexico shortly after completing the film.

The vacation contest is on, open to all members. Among the requirements are that the picture shall have been made this year, be not longer than 400 feet of 16mm. or 200 of 8mm. and may be in color. Contestants must submit subjects in time to be judged for the September meeting. There will be cash prizes.



Bell and Howell's new Filmo 141, 16mm. magazine loading camera, with new "projected area" viewfinder, four camera speeds, single frame exposure device, interchangeable lenses and critical focuser.



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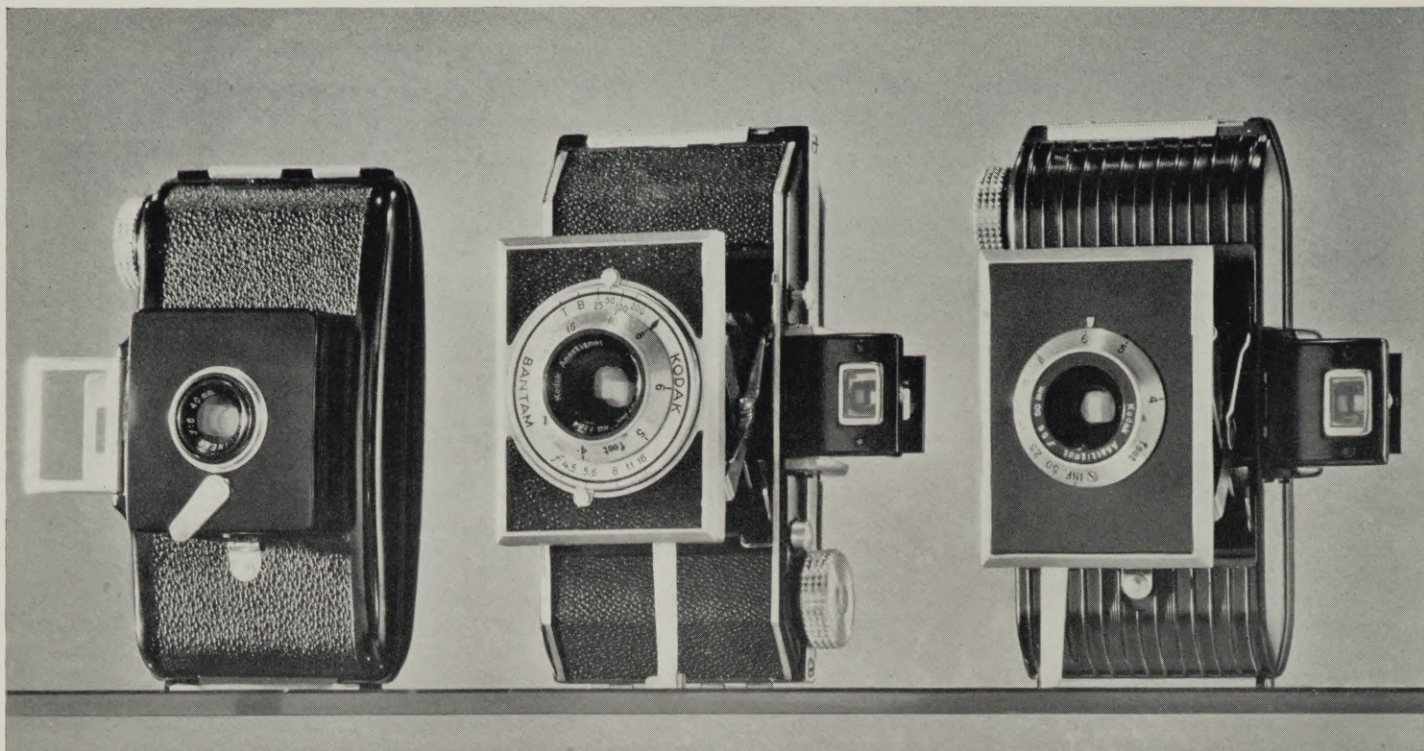
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New series of Kodak Bantams. Left to right, Kodak Bantam f.8, Kodak Bantam f.4.5 and Kodak Bantam f.5.6.

## Eastman Adds Three Members to Fast Expanding Bantam Family

**T**HREE new members of the Kodak Bantam family—a Kodak Bantam f.8, f.5.6 and f.4.5—are announced from Rochester by the Eastman Kodak Company.

Designed for the amateur who wishes a miniature camera of excellent capabilities at moderate price, these cameras, each individually styled, supplement the present Kodak Bantam f.6.3 and the Kodak Bantam Special with f.2 Ektar lens.

Their lenses fully corrected for color, both the f.4.5 and f.5.6 models make ideal cameras for the enthusiast who has yearned for a moderately priced, precision-built camera in which he could confidently use Kodachrome as well as black and white film.

### Up to 1/200

The Kodak Bantam, with fast Kodak Anastigmat Special f.4.5 lens, retailing at \$27.50, is handsomely designed and sturdily constructed. Its body and back are of strong die-cast aluminum covered with black morocco-grain Kodadur. Metal sides are finished in black enamel, set off by a quarter-inch bright metal trim.

The self-erecting front comes into position instantly at a touch of the release button. The revolving lens mount focuses from 4 feet to infinity, and lens openings range down to f.16. Shutter

speeds include time, "bulb," 1/25, 1/50, 1/100 and 1/200, and the shutter release is of the body-mounted plunger type for extra convenience and steadiness.

Film winding is controlled by the convenient automatic centering mechanism used on other Bantams. An accessory neck strap is available.

### f.8 Has Eye Level Finder

The Kodak Bantam f.5.6, to retail at \$16.50, is another attractive, smartly-styled camera. Its front is die-cast aluminum finished in black enamel with satined metal edges, which contrast neatly with the polished black body. The shutter provides speeds of time, "bulb" and 1/25, 1/50 and 1/100 second. Lens openings range down to f.16.

The lens mount is satin finished, and engraved with a focusing scale from 4 feet to infinity. The front is self-erecting, coming smoothly into position at the touch of a button. A folding optical eye-level view finder is provided, and film centering is automatic.

The Kodak Bantam f.8, to retail at \$4.75, will supersede the present Kodak Bantam with doublet lens. All black with bright metal controls, its attractive morocco-grain surface molded into the sturdy case makes secure holding easy. The front comes smartly into position at the touch of a button.

There is a folding open-frame eye-

level view finder, and film frames are automatically centered as in the companion cameras. Fixed-focus, the Bantam f.8 yields sharp negatives of subjects from five feet to infinity, and addition of an 8A Portrait Attachment makes snapshots possible at 2½ feet.

Each of the three cameras loads with eight-exposure rolls in the 828 size, and produces negatives 28 by 40mm., which are customarily printed 2¼ by 4 inches or larger.

When Kodak Bantam f.4.5 or f.5.6 are loaded with regular Kodachrome K828 or Kodachrome Type A, K828A, the exposure instructions packed with the film should be accurately followed.

### New Six-20 Bull's Eye

The new Six-20 Bull's Eye is announced, equipped with a tubular eye-level view finder of new type incorporating a specially designed finder lens. It is universal focus, and produces sharp pictures of any object eight feet or farther from the camera. Addition of a portrait attachment permits snapshots of objects 3½ feet away. The camera body is of sturdy molded material, and loads with No. 620-size film, giving eight 2¼x3¼ inch pictures to the roll. The shutter provides both snapshot and "bulb" action.



## 600 Users and Makers of School and Business Films Get Together

**I**N ITS eighth session in Chicago the National Conference on Visual Education and Film Exhibition drew a gathering of over 600 enrollees.

Outstanding visual educators, motion picture executives, industrial film producers and representatives of various commercial organizations using motion pictures met June 20 to 23 inclusive, to view the latest educational and commercial film releases.

Following each film exhibition was a discussion in which industrial film users exchanged their ideas with educational visual heads, directors of visual departments and others. A great deal of important information was contributed along the lines of production, distribution and utilization of motion pictures for sales, advertising and pedagogical purposes.

### Many Films Shown

Among the films exhibited were "German North Sea Coast," by Fred Semb of the German Railroads, Chicago; Fireman's Fund Insurance Company's "Remember Jimmy," DeVry School Films, Social Security Board's "Today's Frontiers," WPA's films "Hands" and "We Work Again," International Harvester Company's "Modern Education at Beaverton Consolidated School," Borden-Wieland's "The Eighty Years," World's Peace Ways' "Thunder Over the Orient," Ford Motor Company's "Making Safety Glass" and "Yellowstone National Park" and a large number of other films of the Government documentary type, advertising, training and classroom study types.

Sessions were devoted to open-forum discussions conducted by such authorities as Dr. I. E. Deer of the MPPDA on "Human Relations Films," A. P. Heflin of Lane Technical High School on "Movie School Production Problems," Stuart Grant of Pure Oil Company on "Laboratory Problems in Film Production," L. W. Cochran of the State University of Iowa on "School Distribution and School-

made Films," William E. Morse, County Superintendent of Schools, Malad, Idaho, on "The County System of Film Distribution;" O. H. Coelln, editor Business Screen, on "The Correlation of Educational Films and Industrial Problems," and George Rilling, superintendent of schools, Anna, Ohio, on "School Films."

### Boris Morros at Paramount Lectures to U.S.C. Students

With the University of Southern California in summer session, The Department of Cinematography takes on an entirely different aspect than that presented during the regular university year. The only two courses offered during the summer session are the classes in fundamentals of production and in story and continuity. These are both conducted by Dr. B. V. Morkovin, head of the department.

Most radical in change, however, are the students and their attitudes. Regular students are deeply interested in Hollywood and its methods. Summer school students are mostly professional teachers, and they are primarily interested in the problems of audio-visual education and the place of the 16mm. picture in that set-up.

Regular students greatly admire the

leaders of the Hollywood field, while teachers are inclined to cock their head at Hollywood and start giving advice. This situation has resulted in summer school cinematography being nearly an entirely different thing than the regular university program, with its aims and objectives of complete co-operation with and learning from the men who grew up in the Hollywood scene.

On July 23 Paramount Studios and its musical head, Boris Morros, entertained the U.S.C. summer school. The class met in the sound theater of Paramount studios, where the members received a lecture and demonstration on "Music in the Cinema."

### Cinema Music's Future

Mr. Morros traced the past of cinema music, described and demonstrated the contemporary cinema music, and then expressed his views as to what he expected would be the future problems of the cinema's directors of music. The program was highly instructive and greatly appreciated.

Chief amateur production of the summer session will be an educational film on Los Angeles harbor. As yet untitled, the film theme will revolve around the harbormaster, his duties, and the harbor's importance to the Southern California area.

This film is being produced by Annette G. Byrne, member of the audio-visual education department of the Los Angeles school system. It is understood costs are being borne by the Los Angeles school system and the university.

JACK V. WOOD, S.A.C.

*George K. Spoor, the S of Essanay of pioneer days, congratulates Herman A. DeVry at the banquet celebrating the latter's completion of twenty-five years as a manufacturer. Mr. Spoor was a special guest at the gathering honoring Mr. DeVry and a feature of the National Conference on Visual Education and Film Exhibition in Chicago June 22. Over 300 guests, including film folk, industrial film executives, educators, distributors and others were present*

—Metropolitan News Photos





# How I Made a 16mm. \$25 Camera Dolly That Yielded Smooth Shots

By J. ROBERT HUBBARD

I WANTED a camera dolly for use with my 16mm. Filmo. So I made one. I had to. There were two good reasons why I had either to make my own, or go without. In the first place, no commercial manufacturer has as yet got around to making a dolly for 16mm. cameras. In the second place, even if some manufacturer had done so, my moviemaking budget is on the slim side, and doesn't allow much in the way of expenditures for equipment that will only be used occasionally.

So I made myself a dolly—for a total cash outlay of \$25. I'll admit this was augmented by forays upon junkyards and similar sources of unconventional "raw materials" and by the kind cooperation of a friend who let me use his machine-shop. But the family bank-roll shows only \$25 spent in producing a dolly that gives me professionally smooth trucking shots.

The first consideration in making a camera carriage of this type for home use is to realize that there's more to it than simply putting a set of wheels under a tripod. That will move your camera right enough—but it won't give you really professional trucking shots.

If you will study the pictures and descriptions of professional camera-moving equipment which appear from time to time in such magazines as *The American Cinematographer* you will see that the studio-made dollies carry more than just the camera. First of all, they must carry the cameraman.

## Rolling Tripod

If you don't think so, imagine for a minute the difficulty of keeping your eye to a camera's finder while walking beside a rolling tripod. If you're very lucky, you might be able to do it and get a shot that was only a trifle jiggly. More likely, your shot would be downright bumpy, and the action poorly followed.

Point two is that a good dolly should make provision for carrying its own lights. This is most important of course when you are following people moving through a room, for we amateurs don't as a rule have enough lighting equipment to allow us to light up a big room or a large corridor AND keep our people well illuminated too.

So the foundation of my dolly was a wooden platform about four feet long and a bit under 30 inches wide. This was simply a rectangular framework, cross-braced for rigidity. On top of this was

a simple flooring of ordinary tongue-and-groove floorboards.

Then I went to a handy auto-supply store and bought a few cents worth of rubber floor matting. This was secured to my dolly floor with rubber cement.

The biggest single item in my cost sheet was the wheels. For these I went to a toy store and bought a set of sturdy, rubber-tired wheels such as are used on children's scooters and coaster-wagons. I paid \$6 for a set of four wheels and pneumatic "doughnut" tires.

For axles I simply used lengths of steel rods, appropriately sized. The wheels are held on the axles with cotter-pins, while the axles themselves simply pass through holes in the floor framing. This means that my dolly is not steerable; but in many instances this is an advantage, in addition to making simpler construction.

Nevertheless, I am planning before long to fit a supplementary pair of wheels which can be pivoted or screwed in and out of place, which will permit steering when I want to.

## Calling Mr. Ford

The upright member that supports the camera is one of my junkyard purchases and cost 75 cents. It began its career as half the rear-axle housing of a Model T Ford. At one end Mr. Ford had generously provided a nice spreading flange, complete with bolt-holes, which could easily be bolted to my platform.

At the other end I fitted a tubular metal block equipped with a set screw which, in turn, was operated by the wheel of a garden hydrant faucet. The making of this block, by the way, represented the biggest part of the machine work I had to promote from my machinist friend.

Sliding up and down within the re-juvenated flivver axle was a metal rod—either steel or dural will do. At the upper end of this rod I fitted a screw to which I could attach a regular pan-and-tilt head, borrowed for the occasion from my tripod.

Thus I had a pillar which would hold the camera, with any desired accessories, at any height, and which could be locked in place by means of the set screw.

The next item was to provide something for the cameraman to sit on. A visit to a second-hand store unearthed the seat and screw of one of those old-fashioned adjustable piano stools. The seat itself was re-covered with black leatherette. The screw socket was, after

some trouble, mounted in the longer part of a plumber's T-jointed pipe.

The third opening in this pipe was connected to another length of pipe which in turn was fixed to a right angle pipe joint, which connected to a second section of straight pipe which formed the upright support of the seat.

## Making Swivel Seat

Here's how I made the swivel connection which holds this upright firmly to the floor, yet permits the operator to swivel it to any position he desires. Of course, since that particular section of the floor had to carry the weight of the cameraman I reinforced it with a two-inch cross brace between the side frames. At the appropriate spot, I drilled a hole in this brace and the floor planking, sufficiently large to allow my pipe to pass through freely.

Next, I took two regular threaded flanges. I turned down the threads from one of them, so I had one threaded flange and one flange-shaped collar. Slipping my pipe through the hole, I screwed the threaded flange to it. Then I slipped the other, unthreaded one down over the pipe from above.

Finally I bolted the two together, running the bolts completely through the floor and framing. This gave me a joint, with ample bearing surface for rigidity, which could be pivoted as desired.

To carry lighting equipment I simply bolt a pair of flanges on the two front corners of my platform. Smaller pipe uprights screw into these flanges and are fitted with set screw locks at the top. Into these tubes I can slip the supporting rods of any type of lamps—either floodlights or spotlights.

A U-shaped handle, also made from sturdy pipe and strongly braced, is mounted at the rear end of the platform, and provides a means of either pulling or pushing the dolly and its load.

## Moving Shots

Naturally, with two lamps and the electric motor I often use to drive my Filmo, there would ordinarily be a lot of trailing wires to get tangled in making a trucking-shot. This difficulty, however, has been avoided by building the greater part of the wiring right into the dolly.

A flush type multiple outlet is set into the floor of the platform, well forward, where it will be out of the way. From this, underneath the platform, wires run



to two single, flush type sockets on the two opposite sides of the frame.

Thus when shooting a moving shot the two lamps and the camera motor can be plugged in to the outlet on the floor of the platform, and this in turn fed through a single cable, connected to either the left or right hand side of the dolly, as convenience may dictate.

In practice, this home-made dolly is working out even better than I had expected. It is big enough to be satisfactorily steady, even with a 35mm. hand-camera like an Eyemo or with the support raised to its maximum height. On the other hand, it is small enough to

be transported easily in the rear deck of any small business coupe.

Since it is only about 32 inches wide it can be run through any average door. (This is an important point, for you may often want to dolly through doors in houses where the doors are narrower than yours at home!)

I built this dolly for my own use, but it begins to look as though I weren't the only one who wanted such a device. Several amateur and semi-professional cinematographers have already rented it when their pictures needed moving-camera shots.

Most recently, a professional studio has even used it, for M-G-M has rented

it for use as a "prop" in Clark Gable's current film, "To Hot to Handle," in which the star appears as a newsreel cinematographer!

Of course this last is decidedly unusual; but from my own use of the dolly, and the calls I have had from other amateurs, it seems to me that amateurs in almost any other city could find much pleasure—and profit—in making themselves similar devices. One can go to a great deal more complication and expense than I did in making this, but my experience proves that an efficient, workable dolly for home-movie camera-work can be made with remarkably little trouble and expense.

# Amateur Who Works Out Details of Picture First Is Best Started

By J. FRANCIS BROOKS

Member General Committee Australian Amateur Cine Society,  
in *The Movie News*, official organ of the society.

SEVERAL articles by the editor have appeared in these columns, the objects of which have been to encourage the "ordinary cine worker" to take up his camera and to keep him interested in it; to tell him how and what to take; to give him a complete insight into the hobby so far as it affects him; and to show him how to make competent films and project them competently.

The articles were directed more particularly to the "homely" cinematographer—the man whose interest in the hobby is solely the making and showing of interesting films of his family and friends, his holidays and travels, his hobbies and interests, and other subjects worthy of his cine camera and within his capabilities.

The creative side of movie-making dealt with last month brought the man behind the camera into easy technical aspects undertaken by the advanced worker and it is now proposed by me to dwell briefly on the all-important subject of writing a scenario.

It was stated by a well-known writer in the *Amateur Cine Journal* recently that successful cinematography is directly proportional to the amount of care bestowed upon details, not only when operating the camera, but even before the camera is brought into use.

It has been stated, almost ad nauseam, that every film should be planned on paper before any attempt is made to bring the camera into use. Notwithstanding the ad nauseam part of it, the advice is unimpeachable.

If every amateur cameraman were to sit down with pencil and paper and

work out the details of every proposed film—however "homely" the subject might be—he would be well started on the road to competent film making.

## Scenario and Framework

Writing a scenario is not preparing an architectural plan to which all technique is referred and which must govern every later situation. It is rather pro-

viding the framework upon which necessarily the movie must rest.

The basic and most essential feature of scenarization is the division of the action into scenes so that the story can best be told with the motion picture camera. The tendency of most beginners at scenaria writing is to make scenes too long and to include more



Robert Hubbard's \$25 home movie dolly in action



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The contest is world wide and open only to genuine 8mm or 16mm amateurs or amateur clubs.

The contest ends at midnight October 31, 1938. Entries, mailed or expressed, later than that time will not be eligible.

Pictures submitted will be judged for photography, entertainment and/or story value, direction, acting, cutting and composition.

The decision of the judges, among whom there will be prominent cameramen, will be final. Announcement of the awards will be made as soon after the close of the contest as possible and checks sent to the winners.

Pictures may be submitted either by individual amateur movie makers or they may be submitted by amateur movie clubs. Each entrant must have his entry or entries accompanied by a sworn statement, the blank for which will be forwarded to him to fill in.

Contestants may enter as many subjects as they desire. One entry blank will cover all subjects.

The American Cinematographer reserves the right not to declare a prize for any classification if in the opinion of the judges there is not a picture submitted sufficiently good to be classed as a prize-winner.

The American Cinematographer retains the right to make duplicates of such prize-winning pictures as it may

indicate, for free distribution to clubs and amateur organizations throughout the world.

If you intend to enter the contest, please send coupon on this page for official entry blank.

### NOTICE TO FOREIGN ENTRIES

Films from foreign countries will be admitted to the United States duty free if the pictures are made on American made stock. If this is the case, this fact must be included in the shipment, also the information must be given that it is for non-commercial use. If the film is not exposed on American made stock duty will have to be prepaid by the sender at the rate of \$1 per hundred feet.

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Please send me one of your official entry blanks. I intend to enter a (16mm 8mm) picture in your 1938 contest. I understand my entry must be in your office not later than October 31, 1938.

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action than should be presented from one camera position and angle.

SCENE in motion pictures does not refer to the set, but to the camera position; in movies there may be many scenes in one set.

The foundation of a film is a story. The task of a film writer is to find a theme of direct human appeal. This scheme must be emotional; it may be humorous or serious. It must be constructive. In the beginning it must set out to do something and before it ends that something must be done.

#### Beginning, Middle, End

Working out the story in terms that can be handled is more important than the precise nature of the plot. The real art and expression will come in interpreting the story in motion picture terms. It is well to remember that a plot has a beginning which states a problem, a middle which develops the problem and an end which presents an answer. The simplest method of plot writing is to set an objective for some character and then throw obstacles in the way of attainment.

In simple and straightforward photoplay there are seven camera positions. They are most easily explained by dividing them into three groups.

In the first group we have what are called the establishing shots, they are the full shot and long shot. The full shot includes an entire scene or natural setting. It is a general impression shot. It may present a racecourse scene or a city street, etc. The long shot may include anything from a half to a full setting and is generally at a distance from the camera ranging from 25 to 100 feet. Establishing shots must be used with great caution.

In the second group we have the three explanatory shots. They are Medium Long Shots (M.L.S.), the Medium Shot (M.S.), and the Medium Close Shot (M.C.S.).

The M.L.S. shows the full figure of a player or players.

The M.S. shows the player from the knees upward.

The M.C.S. shows the players from the waistline upward.

In considering such mechanical details I would urge you to remember that the basis of film making can be likened to the letters of the alphabet which are at the command of the writer.

#### Big Close-Up

The third group of this series includes the climactic shots which are of great importance to the sentiment of a film drama. They are the close-up (C.U.) and the big close-up (B.C.U.)

The C.U. shows an actor from the top of his head to the V of his tie.

The B.C.U. shows the face only.

These shots must be decisive and incisive in meaning. The players in such cases must have something of great importance to say or do or think.

Planning the continuity of a motion picture is simply outlining the story in scenes that are intended to be filmed. This is referred to as a scenario.

The creation of plots does not in itself constitute the production of good literature in photoplay. It is the interpretation of the plot in important human terms that counts. Plots are cheap, but ART is still elusive.

Careful editing can accomplish marvels BUT it cannot do as much as careful planning plus editing.

### Los Angeles Cinema Club

The Los Angeles Cinema Club met in the auditorium of the Eastman Kodak Company on Monday, July 11.

On behalf of a special committee, James H. Mitchell submitted amendments to the by-laws approved by the board of governors. The amendments made provision for the appointment of successors to the offices of president, vice president and secretary-treasurer made vacant for any reason.

Mr. Judson of the Los Angeles School of Design spoke in general terms on composition. He recommended to the club for valuable information the following: "Journal of English Photography," "Documentary Film," by Paul Rothe; "Pool's Pictorial Composition," "Emphasis and Pictures," by N. Haz, and "Amateur Movies and How to Make Them."

Mr. Harrison spoke on the theory of filters. He led a general discussion of the membership which brought out many questions.

Dr. LeRoy Bailey summarized and dis-

cussed current literature of interest to amateur moviemakers.

The one hundred foot roll of film awarded to members for experimental studies was made to Mrs. McMillin. The other film was returned by the member who won it with the statement that he did not feel he had time to do the problem justice.

### New Baby Keg-Lite Born at Bardwell-McAlister's

**S**IMPLICITY and lightness are the keynotes of a new 500 watt unit introduced by Bardwell & McAlister, Inc., Hollywood lighting equipment manufacturers. Following the general lines of the Keg-Lite, this Baby Keg weighs only 28 pounds complete with double riser stand. For breakdown the head only weighs 16 pounds, stand 12 pounds.

The popular BM quick-focusing device has been further simplified. A lever arm, protruding from both front and rear, is moved from side to side for focusing spot to flood. So simple is this mechanism that a high lamp can be focused by merely exerting a pressure against the protruding lever.

The lamp can be furnished with either pre-focus or medium bipost sockets. Both types of sockets are porcelain base, insuring against deterioration from heat.

A short focus 6 inch diameter fresnel lens combined with a pre-focused high reflecting mirror gives great efficiency in lighting output.

The Keg-Lite lines and ventilation incorporated in this lamp make for longer globe life as well as coolness of operation.

This lamp, while light in weight yet of sturdy construction, is a contribution to the small spot field for studio and professional and advanced amateur use.

### 8mm. Gadgeteers Stage Parade of Devices

(Continued from Page 338)

of added length to the tripod which permitted a tall man to peer through the camera finder without running the danger of acquiring a crick in his back during extended filming.

A sunshade, fading glass and mask holder was next displayed. This had a flat base which was secured between the camera and tilthead. An upright extending in front of the camera lens held the sunshade and a rack and pinion device for cranking mask or fading glass in place. Masks containing apertures of different shapes such as keyhole, circular, diagonal, etc., were constructed of thin wood composition stained a dull black.

His next demonstration was a film viewer somewhat similar in appearance to the Eastman viewer with the exception of the ground glass field which had been enlarged several diameters.

To those interested in changing film for making double exposures and dissolves, a changing bag of opaque ma-

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terial having a large window of red cellophane proved of interest. The window could be closed when the owner desired to change color or panchromatic film.

The bag was large enough to hold the camera and permit free movement of the hands which were inserted through holes fitted with elastic. The aperture for insertion of the camera was closed with a zipper.

A program of home movies ended the meeting of this progressive club.

## Educator Must Keep Pace with Projector

(Continued from Page 339)

watt lamp which was incorporated in the first type projector.

### 1000-1200 Follow 750

The 750-watt lamp has enjoyed much popularity, and it is today considered standard equipment by many of the leading projector manufacturers. The screen brilliance when using the 750-watt lamp is found to be quite satisfactory for not only the average classroom but also for the smaller auditoriums.

Following the 750-watt came the 1000-watt, and then the 1200-watt for use in large school auditoriums or where a

greater distance exists between the screen and the projection booth. The 1200-watt lamp was released in June 1938 and is a very recent development.

I should now like to make a comparison between the 1200-watt lamp and the 750-watt so that some idea might be had of the added brilliance derived from the more powerful lamp.

It might be advisable to mention here that maximum screen brilliance is not derived only from the increased wattage, but that in a lamp such as the 750-watt, or anything higher, a complete new optical system must also be incorporated to secure or take full advantage of the added wattage.

### Optical System

You might be interested in knowing more about the optical system, and in this connection I might mention that it is usually explained as consisting of the following:

Lamp, condenser, auxiliary condenser, shutter and lens. The efficiency of these units considered separately, and in combination, determines the relation between the amount of light reaching the screen and the total energy emitted by the lamp. We might project on the screen the optical units individually so that we might secure a better idea of what the entire combination does toward illuminating the screen:

1. Lamp only
2. Condenser
3. Auxiliary condenser (which further condenses the light)
4. Shutter
5. Projection lens.

### Light May Be Varied

You will understand that any projector gives just so much total light, and by placing the projector near the screen, or at a greater distance from it, or by using lenses of various focal lengths the image brilliancy can be varied.

The brilliance read in foot candles is a direct function of the screen size and we might here dwell on the matter of correct screen brilliancy measured in foot candle intensity.

Practically all physics departments in the average school are equipped with a foot candle meter, and if one should care to check up on the projector brilliancy and determine the correct distance for setting the screen it might be done as follows:

In taking foot candle measurements it has been our experience to take five readings—on the top center, the lower center, the left center, the right center, and also one reading directly in the center.

If an intensity reading of six foot candles is made, you will have excellent screen brilliance, but should the reading be in the neighborhood of four foot candles it would be rated as quite comfortable and very fair—(15 per cent).

From what already has been demonstrated it is obvious that the 16mm. projector or the 16mm. film width should no longer be classified as "amateur," be-

cause there is nothing amateurish about it, and through scientific research and mechanical achievement it has definitely reached a stage where it should be classified as the educational standard.

The quality of projection is very important, especially in educational work, where the factor of eye fatigue is so highly important, and this problem has been given every possible consideration by the 16mm. projector manufacturers.

We feel that in the educational standard machines we have attained the maximum in picture steadiness and also have eliminated the objectionable flicker, which has always been one of the major causes of eye fatigue.

Steadiness of the picture on the screen

8

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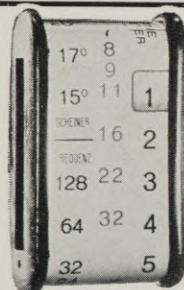


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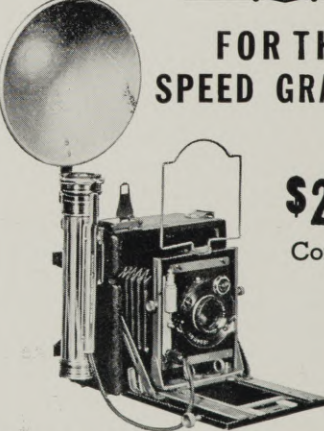


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is very important, as anything but rock steady pictures will tend to create eye fatigue as quickly as that produced by flicker. A recent War Department specification requires that the projector image must not have a greater jump than one-fourth inch on a screen 6 ft. high, and in the average 16mm. projector this specification is easily met.

#### Compare First and Last

In conclusion I should now like to project on the screen the light from the latest type of 16mm. projector which was designed primarily for large school or college auditoriums. A comparison between this light and the original 200-watt light is quite interesting and you may now have a much clearer visualization of exactly what advancement has been made in projection equipment for educational purposes.

The brilliant light you now see is emanating from the Bell & Howell 16mm. arc projector, which will be utilized in such installations as that of the U.C. L.A. Royce Hall Auditorium, which requires that the projector have ample light to carry from their booth to the screen and which, in this particular auditorium is approximately 120 feet. Incidentally, this Forum is honored in being the first group to witness a public demonstration of the new projector.

For those interested in examining this latest tool of the educational director we shall have it installed at the Bell & Howell auditorium this afternoon at the Film Clinic, and a technician will be in attendance to explain its operation or any other point of interest.

#### Make-Up as Aid to Amateurs

(Continued from Page 337)

It is possible convincingly to change the shape of the mouth. It is often desirable where you need to improve the expression, to apply lip rouge in such a way as apparently to enlarge a small mouth, or minimize an overly large one. This is done by applying the lip rouge as desired, forming the necessary size and outline, and then blending in the foundation color to the new lip line.

The final operation in applying a "straight" make-up is powdering. This removes any trace of sheen from the oily base of the make-up and completes the smooth, uniform color and texture desired.

It is most important to remember that powder must be applied with a gentle, patting motion—never rubbed on. Do not be afraid to apply the powder profusely: it is practically impossible to get too much on, for the moist base will hold only so much.

Pat the powder over the lip-line, and also, though sparingly, over the eye shadow. If there are wrinkles, gently draw out the skin and pat more powder into the wrinkles.

To remove the surplus powder, use the soft brush made especially for this

purpose. Be sure to brush the entire make-up lightly and carefully, leaving the complexion smooth and dry.

#### When Using Brush

At this point, it is possible to retouch the lips and eyebrows if by chance the powder has interfered with these details, and to apply masque, cosmetic, or even artificial eyelashes if anything is necessary to accentuate the lashes.

Masque is applied with a small brush, moistened in water. Several applications may sometimes be necessary. Cosmetic has the advantage of being waterproof. It is prepared for application by placing in a small receptacle and warming until melted. The cosmetic is then applied with a paper liner or an orange wood stick as one would apply masque.

Modern make-ups are easily removed. The liquid make-up used for making up women's shoulders, arms, and other exposed parts which must be made up can be removed with soap and water. The other make-up products are removed with cold cream. Massage the face well until the cold cream has dissolved all the make-up. Then wipe the face thoroughly, and wash in warm soap and water, following with a cool rinse.

#### Make-Up Chart

It is impossible to set down iron-clad rules for make-up, since each individual's features and coloring call for

individual variations. Experience has, however, enabled us to set forth a general guide sufficiently accurate for most purposes.

It must be understood that this is for the regular super-sensitive panchromatic film generally used in the studios, and cannot apply to the cheaper orthochromatic films. It can be modified for all of the familiar panchromatic types available for sub-standard cameras.

Taking the professional superpan as the standard, if the film used is slower, use a lighter make-up; if it is faster, use a darker make-up. The higher the number, the darker the shade of make-up.

#### Young Women

	Blond	Brunette
Foundation .	27	26
Powder . . . .	27	26
Lining Color.	21	22
Masque . . . .	Brown	Brown
Eyebrow		
Pencil . . . .	Brown	Brown
Moist		
Rouge 390-A	Medium	390-A Medium

#### Men

	Blond	Brunette
Foundation .	28	29
Powder . . . .	28	29
Lining Color.	22	22
Masque . . . .	Brown	Brown
Eyebrow		
Pencil . . . .	Brown	Brown
Moist Rouge.	7	7

#### Elderly Types

	Women	Men
Foundation .	25	26
Powder . . . .	25	26
Lining Color.	21	21
Masque . . . .	Brown	Brown
Eyebrow		
Pencil . . . .	Brown	Brown
Moist Rouge.	8	7

#### Film Footage Export Declines

Preliminary figures for the first six months of 1938 for American exports of motion picture film both Negative and Positive sound, show a decrease of nearly 4,000,000 linear feet as compared with the corresponding period of 1937, according to Nathan D. Golden.

During the first half of 1938 a total of 97,473,313 linear feet of negative and positive film, valued at \$2,122,719, was exported as compared with 101,290,716 linear feet with a value of \$2,264,738 for the first six months of 1937.

#### Forum Holds Successful Meeting

(Continued from Page 335)

Leopold Stokowsky and his Philadelphia Orchestra; recording by Freddy Martin of a modern swing tune, the same kind of a recording by Tommy Dorsey, and a recording of a Walter Disney cartoon.

Yes, and there was the unforgettable recording of Allan Jones' "Donkey's Serenade." It was worth traveling a distance to hear.

On Thursday afternoon preceding the

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opening of the conference there was a preshowing of three pictures at the Fox West Coast Boulevard Theater under the auspices of Dr. Boris Morkovin of the U. S. C.'s Department of Cinematography. The subjects were "The River," Government documentary film; "The Romance of Radium," M. G. M. release, and "The Man Without a Country," Warner Brothers.

Among discussion leaders at the various sessions were Dr. Morkovin, Boyd B. Rakestraw, visual education department, Extension Division, University of California, Berkeley; Dr. William J. Klopp, supervisor secondary education, Long Beach, and Floyd Crosby, A.S.C., holder of Academy grand award 1930-31 for photography on Mirnau's "Tabu."

The following pictures were shown:

#### FRIDAY.

9:30 A. M.—Heart and Circulation, ERPI classroom film.

Design of an Idea, Kodachrome and synchronized, Frank Judson, Art Center School.

Day of Thrashing in Iowa, Terry Bessinger and George Volger, U. S. C. Educated Feet, Beverly Hills Schools, E. J. Hummel, superintendent; Roger Barlow, photographer.

The Elephant, presented by Paul L. Hoefler, F.R.G.S., producer of Africa Speaks.

4 P. M.—Erpi's English Canals and String Choir, Edith Frost's Leisure Activity and Helen Martin's Pigs on the Farm.

7:30 P. M.—Our World, story of high school life, produced under the supervision of Fremont High School, Los Angeles; C. A. Bach, photography department; Mrs. Mabel Mattison, dramatic direction, and Mrs. Mildred Percival, music department.

Comparative Development of Infant Human and Chimpanzee, Dewitt Myttinger.

Sequences from Cobbler Captain of Koepenick, with German language sound.

#### SATURDAY.

9:30 A. M.—Present Day Germany, Russell-Wright.

The Airliner, Donavin Miller, TAIE production.

Japan, Kodachrome synchronized presentation by Fred Orth, U.C.L.A.

Demonstration on development of 16mm. projection, H. W. Remerschied (the paper of which is reprinted on another page).

2 P. M.—

Harbor Activities, Emily Frith—Safety and The Pilot.

Digestion, University of Chicago, Erpi classroom film.

Dalighting the Padres Trail, Castle Films.

The Mail, Donavin Miller, TAIE Productions.

Creative School Music, Lillian Mohr Fox, supervisor music, Pasadena city schools.

Night Blooming Cereus — Frances Christensen and Harry Merrick.

Impressions of Mexico—Floyd Crosby, A.S.C.

4 P. M.—China, by Abbe Charles

Meeus, Catholic Mission, Haimen, China, showing rescue work of the mission, Boy Scouts saving children and rehabilitation.

Edward Nassour's preview of Walmanettes, a third dimensional process of animation in color.

Floyd Crosby's Life Among the Corals, under sea.

Erpi's Navajo Children, photographed by John Haesler.

Potter's Wheel, by Albert Bailey.

7 P. M. (shown following dinner)—Magic in Music, Ralph Jester, Paramount.

Grasshopper and the Ants (prerelease), by Walt Disney.

Jumps and Pole Vaults, slow motion photography, Erpi Film.

A Day at Camp Seeley, by W. J. Larivee, photographer Los Angeles Department of Playgrounds and Recreation.

Mount Zao, photographed by Khoji Tsukamoto, Cherry (amateur) Society, Japan, winner of prize for photography in American Cinematographer's contest for 1937.

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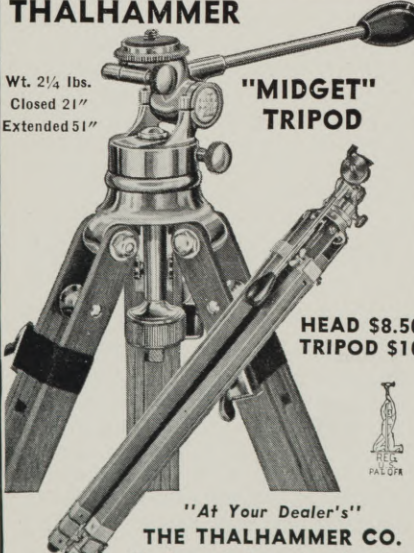
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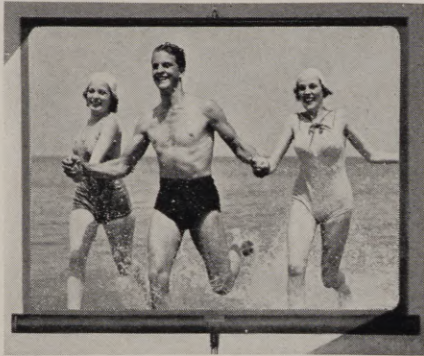
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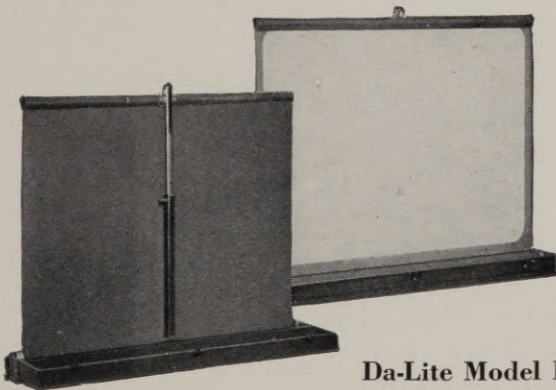
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